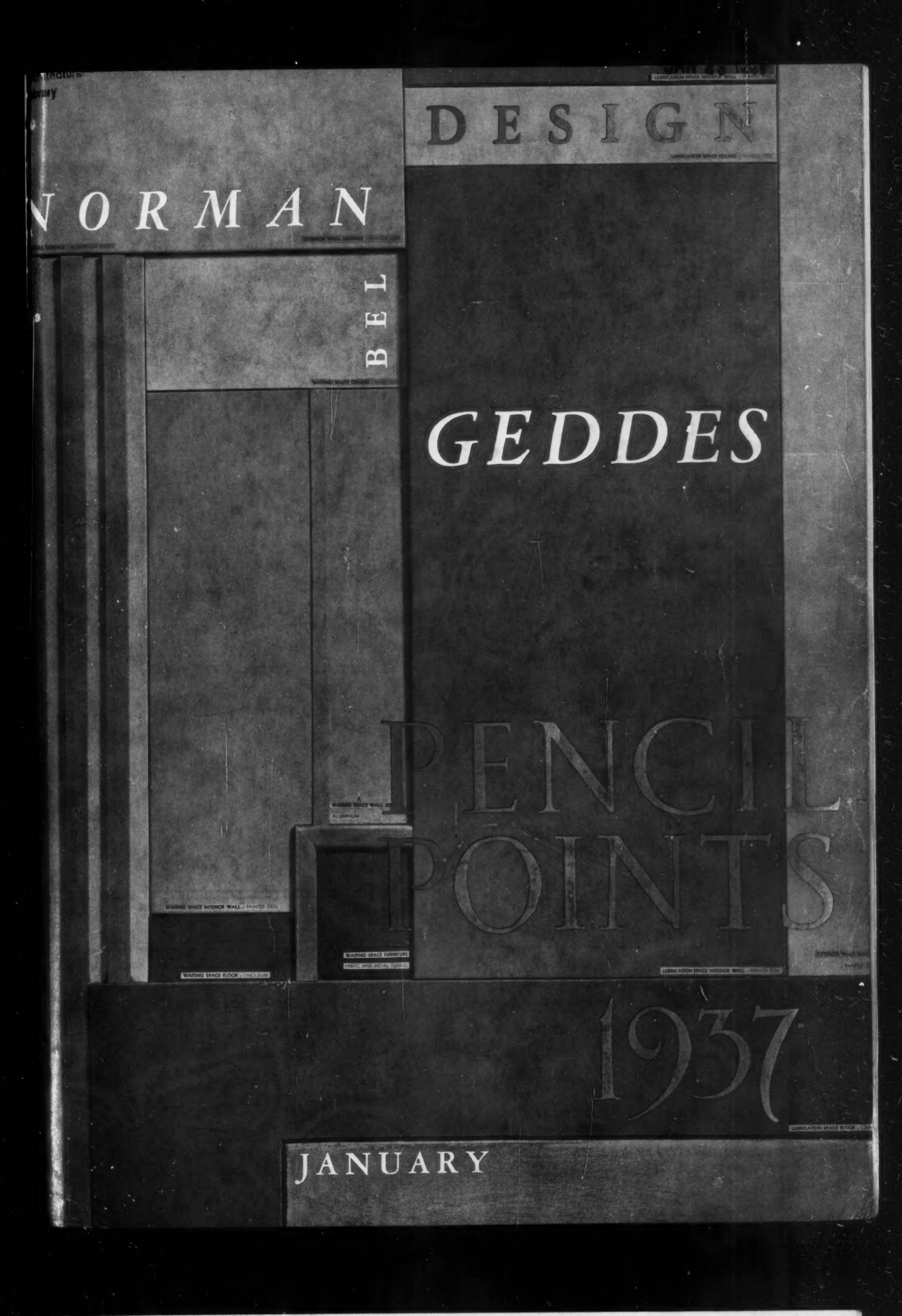
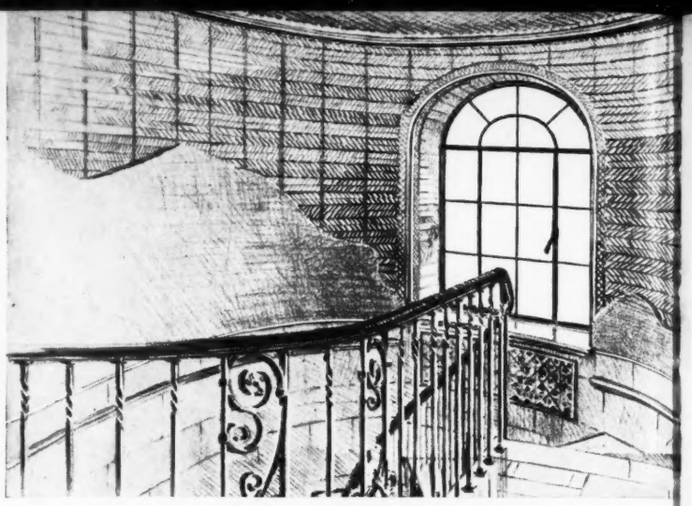
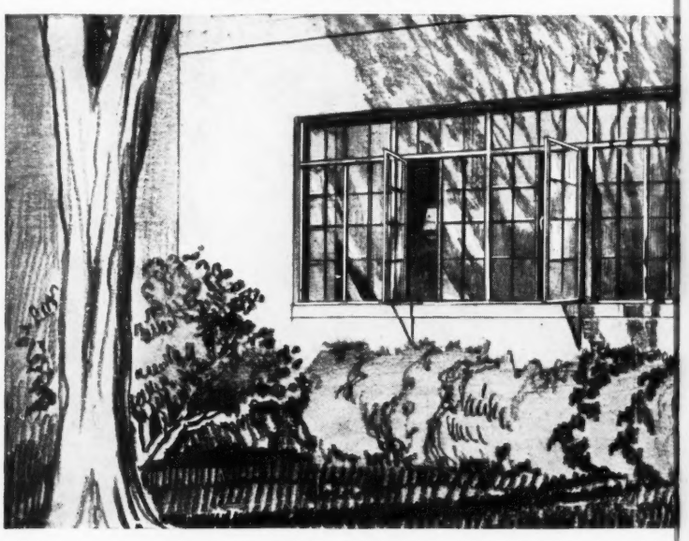

DESIGN
NORMAN
BEL
GEDDES
PENCIL
POINTS
1937
JANUARY

WHAT DOES TRUSCONIZE MEAN TO THE ARCHITECT



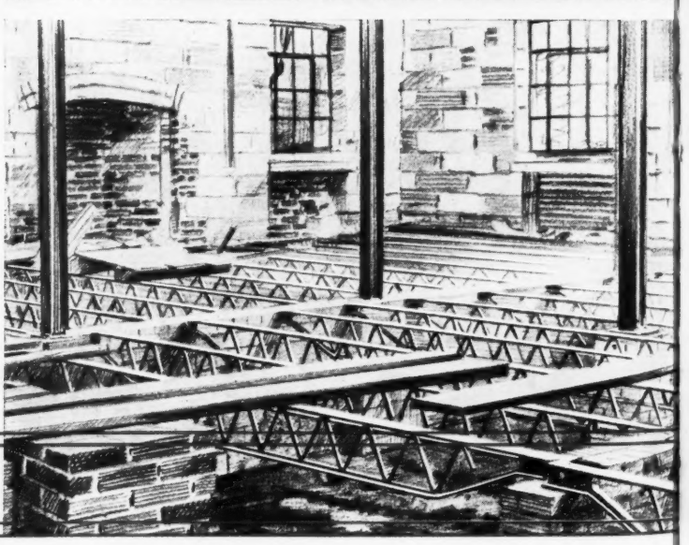
BETTER WALLS AND CEILINGS

To specify Truscon Metal Laths for plastered walls and ceilings is to specify a permanent grip of plaster to steel. Time proves the wisdom and ultimate economy of the use of Truscon Metal Laths which guard against unsightly cracks and other defects often suffered with other types of plaster base.



BETTER WINDOWS AND DOORS

To specify Truscon Steel Windows and Doors is to combine beauty of design with ease of operation, firesafety, permanence and true economy throughout the life of the structures in which they are used. There's a correct type and size of Truscon Steel Window and Door for every residential, architectural, monumental and commercial requirement.



BETTER, SAFER FLOORS

To specify Truscon Open Truss Steel Joist construction with concrete fill is to insure fire-resistant, structurally strong floors. The slight extra cost of Truscon Open Truss Steel Joist floor construction is actually an inexpensive form of insurance against premature obsolescence of floors.

BETTER CONSTRUCTION

● Better construction of all buildings, including residences, is receiving more attention than ever from architects, builders, financing institutions and owners. Every Truscon building product in the most extensive line of its class in the world, contributes to better construction of all types of buildings. Safeguard the future of the work you plan. Protect owners against losses caused by premature obsolescence. TRUSCONIZE!

Make Truscon's 80-page catalog in Sweet's *your* guide to the elements of sound construction and lasting values.

Truscon Steel Company
YOUNGSTOWN, OHIO

Truscon's nation-wide network of 57 sales-engineering offices, 27 warehouses and over 6000 dealers makes Truscon Steel Company your "next-door-neighbor" regardless of where you are located.

D E S I G N

VOLUME XVIII NUMBER 1

ARTICLES

1 Norman Bel Geddes, Master of Design — *Kenneth Reid*
33 The Architectural School — *Ellis F. Lawrence*
43 Trailer Design by an Architect — *Albert Kingsley*
49 Architectural Education — *Ralph Walker*
63 Guptill's Corner — *Arthur L. Guptill*

PLATES

47 Orrefors Glass Window — *Simon Gate*
48 Orrefors Glass Window — *Edward Hald*

COMPARATIVE DETAILS—Group 34

55 Corner Window Treatments. *The Work of George Howe; Robert Law Weed; R. L. Davidson and John Callender; A. Lawrence Kocher and Gerhard Ziegler; Talcott and Talcott; Royal Barry Wills and Hugh A. Stubbins; L. Murray Dixon; Robert M. Brown*

DATA SHEETS—*Prepared by Don Graf*

52 Cedar Closets, Hot Water Storage Tanks, Sills in Frame Construction, Average Room Sizes

HERE, THERE, THIS, AND THAT

11 Letters from Readers, News from the Field, etc.

PENCIL POINTS

KENNETH REID
EDITOR

RUSSELL F. WHITEHEAD
EDITORIAL ADVISER

RALPH WALKER
EDITORIAL ADVISER

Published Monthly by REINHOLD PUBLISHING CORPORATION, *Stamford, Conn., U.S.A.*

Ralph Reinhold, *President and Treasurer* — H. Burton Lowe, *Vice President and Secretary*
Philip H. Hubbard, *Vice President* — Francis M. Turner, *Vice President*

Executive and Editorial Offices: 330 West 42nd Street, New York

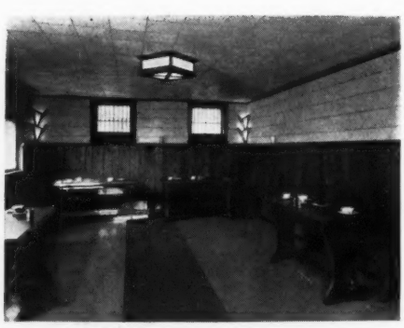
50 cents a copy. Yearly subscription $3.00, two years subscription $5.00, payable in advance, to the U. S. A., U. S. Possessions, Cuba and Mexico. Foreign subscribers add $1.00 a year for postage; Canadian, 50 cents a year additional. Remittances by International or American Express Money Order or by Draft on a bank in the U. S. should be payable in United States funds. Subscribers are requested to state profession or occupation. Changes of address must reach us before the 20th of the month to assure delivery of forthcoming issue. Be sure to give both your old and new addresses. *To Contributors*: Articles, drawings, photographs, etc., sent with a view to publication will be carefully considered, but the publisher will not be responsible for loss or damage. Copyright, 1937, by Reinhold Publishing Corporation. Trade Mark Registered. All rights are reserved. Entered as second class matter, March 10, 1930, at the Post Office, Stamford, Conn., under the Act of March 3, 1879. Volume XVIII, No. 1, dated January, 1937. Indexed regularly in *The Art Index*.

TEMLOK DE LUXE IN SIX PLEASING COLORS OFFERS YOU A WIDE RANGE OF DESIGN POSSIBILITIES IN NEW CONSTRUCTION AND REMODELING WORK

BOTH in colors and forms, Armstrong's Temlok De Luxe gives you an unusual opportunity to achieve original wall and ceiling treatments. These new smooth surface interior finishes are available in *six* factory-applied colors—white, ash, cream, green, walnut, and natural—yet they cost no more than ordinary finishes. Furnished in boards, planks, panels, tiles, battens, and border strips, Temlok De Luxe can be used to create a wide variety of decorative effects. It is easy and economical to erect by nailing or cementing. In addition, Temlok has valuable insulating and acoustical properties that make it desirable.

A good example of the pleasing effect that can be obtained with Temlok De Luxe, is shown in the above view in the first of thirty houses being built by Stockton Broome in the Timquana Country Club district, Jacksonville, Fla. Cream-colored Temlok De Luxe Interior Finishes decorate and insulate the ceiling in this attractive home, designed by architect Kenyon Drake of Jacksonville. The house is additionally insulated with Temlok Insulating Lath.

For your next new construction or remodeling job, consider Armstrong's Temlok De Luxe. Whether it's a home, store, restaurant, club house, commercial or public building, Temlok De Luxe will provide both decoration and insulation—give your client lasting satisfaction. Write today for samples and more detailed information on material and installation. Armstrong Cork Products Company, Building Materials Division, 1005 Concord Street, Lancaster, Pa.



Temlok De Luxe decorates and insulates grill room of the Parkway Pharmacy, Pittsburgh. Tile, in alternating colors of cream and white, is used on the ceiling. The walls have ash colored planks applied horizontally, above a wood wainscot

Armstrong's TEMLOK DE LUXE

TEMLOK INSULATING BOARD **TEMLOK INSULATING LATH**

HERE, THERE, THIS & THAT

Thank You!

This department acknowledges with thanks receipt of many beautiful and clever Christmas and New Year greeting cards sent us by readers. We are sorry that we let the opportunity slip by this year to publish a selection of cards received last year in time to furnish inspiration to those who make their own cards. We promise not to fail our readers again and are saving a number of unique designs for publication at a date when they will be of most interest and service. We regret that we did not send our own greetings to each and every reader in a more personal way but we can record here our sincere wish that 1937 will be a bang-up good year for them to make up for all the tough going of the earlier thirties.

Wall Paper Design Competition

The United Wall Paper Factories, Inc., of Jersey City, N. J., announces a design competition for which cash prizes will be awarded as follows: *First Prize,* $1000; *Supplementary Prizes* (not fewer than three and not more than ten), $100 each. The competition closes at 5:00 P. M., February 27, 1937, and the awards will be made on March 10. Full information may be obtained from F. E. Bolton, United Wall Paper Factories, Inc., Jersey City, N. J.

The Jury of Award, under the chairmanship of Robert Griffin, vice-president of the corporation, includes Alexey Brodovitch, art director of *Harper's Bazaar;* James Davis, president of James Davis, Inc.; Frank G. Noble, chief decorator of Elsie de Wolfe, Inc.; and Richard E. Thibaut, president of Richard E. Thibaut, Inc.

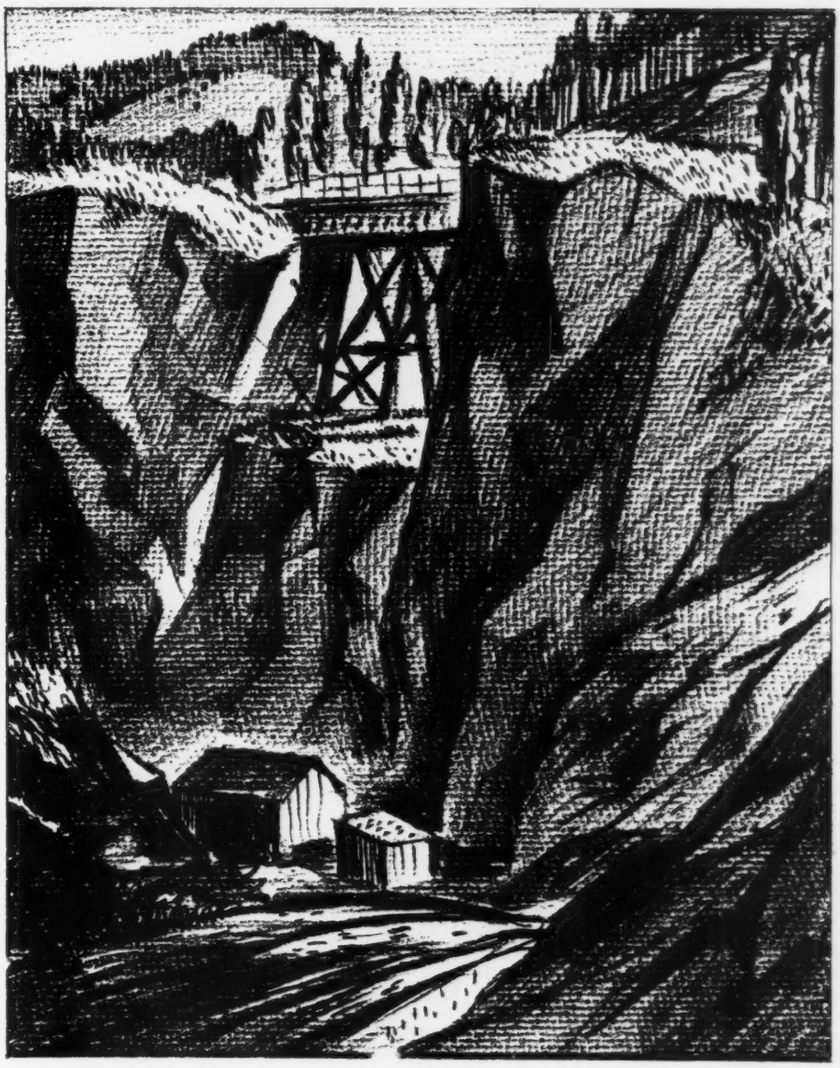
The competition is open to all architectural men, any of whom may submit not more than three designs.

Leon Keach's Boston Gossip

Your average architectural man surveys the profession through the glasses of his current personal fortunes. A new job in the office and everything looks rosy; two jobs, and the impression of permanent prosperity is so vivid that he is minded to open a flock of charge accounts, on the probability of a raise. The repetition of this phenomenon seems to leave no heritage of scepticism, which is probably a blessing, if one but knew it. Thus we have men of equal professional ability hereabouts, some of whom are idle and dourly pessimistic, while others are on the point of purchasing new automobiles, being certain of a continued and rising demand for their services. The latter are probably right, for conversation with Boston architects has shown their general belief that the arrival of new work in any volume will reveal a serious shortage of good draftsmen.

Just what causes the dearth of able hands has been variously ascribed to the seductions of government and business, occasionally to other arts. It is true that the manifold talents of some permit them to move in and out of architecture and still remain in a rarified atmosphere, sometimes a more profitable one. Thus, Silvio Zanetti, without recourse to false beard or other external device, functions with Adden, Parker, Clinch & Crimp by day, and as President of the Y. M. C. U. Camera Club by night. At present he is welding the two arts, by his participation in renovations at the Union, where architectural changes will be set off with photo-murals, produced entirely by club members. Another, such as A. Hutton Vignolles, chooses to devote most of his time to a highly developed talent for making architectural and ship models, which photograph with the illusion of reality, they are so perfectly detailed to scale. Art Thompson is an architectural sojourner in the field of watercolor, in which he is doing serious experimental work at Rockport. But in Arthur Haskell we find a man who has definitely shifted to architectural photography and who enjoys a considerable and rising fame therein.

The only recent prizewinner, come to notice, is Carmen Di Stefano, who



An old quarry in California sketched with carbon pencil on rough textured paper by Norval Gill, recently elected President of the Sketch Club of the California College of Arts and Crafts at Oakland, California. The sketch was adjudged one of the best black and white drawings made by club members in the year just past

just took the Boston Architectural Club's "first," for a good watercolor.

Hair has been torn and babies have been trampled upon, by women eager to be selected as famed users in advertising series featuring extracts or bedsprings. Now, in another series, run by a public utility, we have been shown the beaming countenance of Royal Barry Wills, under "Planning by Telephone Pays." His left hand controls a roll of Semco No. 8, while the other holds a 6 B, poised, ostensibly, for vigorous action.

Such testimony to artistic renown was not so well handled on the recent appearance of Houbigant's traveling window displays, designed by Millard Sheets. In news accounts Mr. Sheets became Mildred Sheets, and Mill & Sheets. Elsewhere the local papers have given publicity to a project that blends art and sanitation, but cultivates the obvious. It has been suggested that the effigy of a super-frog be set up alongside the Frog Pond, with architectural embellishments contrived of rubble, the beast's viscera to consist of a chlorinating plant.

It is a pleasure to report that the firm of Henry & Richmond has been re-established and is again in practice at the old stand.

In the days before the drought there was a fabulous place in Pie Alley called "The Bell in Hand," presided over by the genial, very well liked George H. Boyle. Now, at the "Bell Tavern," in City Hall Place, Mr. Boyle is again in active circulation, and is restoring his architectural clientele.

S. M. *Kurtz Criticizes a Certain Competition*

To the Editor:—

"Lest it be thought that I had a personal axe to grind I purposely waited until every architectural publication had had an opportunity to review and publish the results of the recent competition for the design of a typical building for the N. Y. World's Fair Corporation. So far as I have been able to determine, no such publication questioned, or presumed to criticize the awards as made.

"As exhibit 'A' I refer you to a copy of the program of the competition. I call particular attention to sections IV, V, VI, and especially to the last paragraph in section VI. You will note how enticing is the prospect for the first prize winner. He not only receives a cash prize of $1000, but is awarded, as part of the first prize, a commission to design one of the buildings at the Fair. I venture to say that every architect who entered this competition was not concerned so much with the monetary gratuities involved as with the prospect of the glory and fame coincident with being designated as architect for a building at the Fair. That this thought was also in the mind of the author of the program is evident from the last paragraph of section VI, 'Prizes.' I quote: 'The jury is empowered to withhold any of the prizes, *except the first,* and any honorary mentions, if in its opinion designs submitted do not merit these awards. Not more than one prize will be paid to any one competitor. Drawings receiving prizes become the property of the Fair Corporation.' End of quote; the italics are mine.

"What happened? After interminable delay in announcing the awards, it is disclosed that no first prize has been awarded; an 'honorarium' having been given instead; all other prizes were awarded.

"In consideration of the program does this not constitute a violation of the trust fostered in all architects who entered upon the competition?

"If for some reason, technical or what-not, the author of 'the most meritorious' design was not eligible for the first prize, why in the name of honesty and the terms of the program wasn't the award given to the next 'most meritorious' design? Namely, the one awarded second prize.

"Since this competition had received the official approval of the American Institute of Architects, as so stated in the program, why doesn't this respected institution soundly censure such a flagrant violation of the program?

"And finally, why is it that no architectural publication has seen fit to take an honestly suspicious attitude in this competition to the end that the aspect of honesty and fairness in all future competitions be unimpaired?"

(We believe that the competition was honestly conducted and since we understand that Mr. Paine received, for his "most meritorious design," the full value of the prize, including $1000 in cash and the assurance of being commissioned to design one of the fair buildings, we see no evidence of a violation of the program in any essential way. ED.)

Palmer Fellowship

The purpose of this fellowship is to enable a student of unusual promise to undertake advanced study at the School of Architecture, Princeton University. The holder is exempt from tuition fees, and may receive in addition a cash award from the Lowell M. Palmer Fund sufficient to enable him to complete a year of residence at Princeton.

In awarding the fellowship particular consideration will be given to (1) personal character; (2) achievement in architectural design; (3) scholastic record; (4) professional experience.

All applicants must be citizens of the United States of America, less than 27 years of age on October 1, 1937, and in good physical condition.

To receive consideration for appointment for 1937-38, applications, together with supporting documents, must be received not later than March 15, 1937. The award will be announced on or about April 15, 1937.

Application blanks may be obtained by addressing the Secretary of the School of Architecture, Princeton University, Princeton, New Jersey.

Steedman Fellowship

The eleventh competition for the James Harrison Steedman Memorial Fellowship in Architecture, which carries an annual award of $1500 to be used by the recipient in a year of travel and study, will be held during the coming spring. The Fellowship is open to all graduates of recognized architectural schools in the United States, on equal terms. Candidates must be American citizens of good moral character and must have had at least one year of practical training in the office of an architect, including one year of residence in the city of St. Louis, Mo., before being entitled to assume the benefits of the Fellowship. They must be between twenty-one and thirty-one at the time of appointment.

Application blanks for registration can be obtained by writing to the acting head of the School of Architecture of Washington University, St. Louis, Mo. The blanks must be returned, properly filled out, not later than January 30, 1937.

LeBrun Scholarship

Applications for nomination to enter this year's LeBrun Scholarship Competition should be made at once by interested candidates. Application blanks may be obtained from the Secretary of any Chapter of the A.I.A. or from the LeBrun Committee at 115 East 40th Street, New York. They are supposed to be received before January 15.

The Scholarship carries a stipend of $1400 to be used for a European trip of at least six months. It is open to any architect or draftsman, between the ages of 23 and 30, a citizen and resident of the United States, who has had no other traveling scholarship, and who has had at least three years of practical experience. Candidates may be nominated by any A.I.A. member. The program will be issued about January 16 and the competition will be over about March 15.

We regret that this notice was not received in time to be printed in the December issue and that our January issue, which is normally late, may not reach possible candidates in time to file nominations before the deadline.

Why the LARGEST DEPARTMENT STORE between Richmond and Atlanta is well pleased with its Floors!

Hard Maple floors help this modern department store to maintain its position as "The Predominating Store of the Carolinas."

J. B. Ivey knows that sales stop when shoppers tire—uses Hard Maple for its first floor, where traffic sometimes reaches 21,000 customers in a single day.

ALWAYS important, floors are especially important to a department store. Appearance, sanitation, brightness, smoothness, resilience, easy maintenance and economy must all be seriously considered.

The trudging feet of shoppers, in from all kinds of weather, puts a heavy burden on a floor. Wear occurs rapidly unless the flooring is highly resistant to abrasion. A department store cannot take "time out" for repairs, while people shop elsewhere. And smoothness and resilience are vitally necessary, because tired shoppers do not buy!

J. B. Ivey & Company of Charlotte, N. C., whose traffic may reach 21,000 customers in a day, recently wrote:

"In our present five story building, which we have occupied since 1924, we have used Maple Flooring on our first floor, and on our fourth floor, which is our furniture floor.

"During this period of time, this flooring has been most satisfactory with the exception of trying to maintain the natural light color of Maple Flooring."

This firm appreciates the many requirements of flooring in a modern store—and found them answered in Hard Maple. To brighten their floors, about a year ago they tried steel wool buffing equipment. About this, J. B. Ivey & Company says:

"The machine used with this system has a cylinder of steel wool which removes the soil from the surface of the Maple floor, polishing it and uncovering the natural color, thus making the flooring much easier to keep clean.

"A liquid floor seal is applied with operation of the machine, which leaves the floor in a clean, smooth condition. With the natural Maple color, the lighting of the floor is much brighter, the whole floor having an appearance of cleanliness, and we are well pleased with our Maple Flooring."

In 12 years, J. B. Ivey had but one problem concerning its Maple floors — that of maintaining their natural light color — and solved it quickly with steel wool buffing equipment.

Countless other performance records prove tough-fibred, tight-grained Northern Hard Maple to be the logical choice for the flooring of stores, schools, office buildings, homes, bakeries, factories, mills, warehouses and similar buildings—for new construction or alterations that modernize.

Northern Hard Maple floors may be laid in strips or blocks — with or without pattern — over screeds, wood or concrete sub-floors. Write for booklet which gives grading rules and complete specifications for laying and finishing.

See our catalog data in Sweet's, Sec. 15/53. Our service and research department will gladly assist you with your flooring problems. Write us.

In J. B. Ivey's fourth-floor Furniture Department, the Maple floors create a pleasing wood background in keeping with the wood of the furniture, which has increased sales appeal when displayed on a floor having the friendly warmth of Hard Maple.

MAPLE FLOORING MANUFACTURERS ASSOCIATION

1785 McCormick Building, Chicago, Illinois

Floor *with* Maple

*The letters **MFMA** on Maple, Beech or Birch Flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use. **MFMA**

MFMA Approved

Harrison Gill Writes, Drawing Attention

TO THE EDITOR:—

"In his amusing article, 'Architecture in Every Sense,' Eugene Raskin permits his Great Architect to describe the control of smell as an original sphere for architectural research. Fantastic as the idea may seem, I have wondered whether the author was familiar with a passage from *Seven Pillars of Wisdom.*

"Col. Lawrence recounts: ' . . . we had ridden far out over the rolling plains of North Syria to a ruin of the Roman period which the Arabs believed was made by a prince of the border as a desert-palace for his queen. The clay of its building was said to have been kneaded for greater richness, not with water, but with the precious essential oils of flowers. My guides, sniffing the air like dogs, led me from crumbling room to room, saying, "This is jessamine, this violet, this rose." But at last Dahoum drew me: "Come and smell the sweetest scent of all," and we went into the main lodging, to the gaping window sockets of its eastern face, and there drank with open mouths of the effortless, empty, eddyless wind of the desert, throbbing past. That slow breath had been born somewhere beyond the distant Euphrates and had dragged its way across many days and nights of dead grass, to its first obstacle, the man-made walls of our broken palace. About them it seemed to fret and linger, murmuring in baby-speech. "This," they told me, "is the best, it has no taste." '

"Men have been building for so many thousands of years, all over the earth, that it is possible to find the germ of nearly all original, architectural ideas somewhere far away or long ago."

Pratt Architectural Club Meetings

Under the able and aggressive leadership of Frank Ward, the Pratt Architectural Club has of late greatly increased its activities. The popular Tuesday noon luncheons have been supplemented by Wednesday dinners, one being given on the first Wednesday night of each month.

Following the December dinner, Mr. Sidney Otis of the Otis Elevator Co. exhibited the company film "Riding Skyward," to an enthusiastic group.

Come out, fellows, to these informal dinners and bring your friends. They are at the Club headquarters at 6:30.

And don't forget to send news items for the bulletin.

A.L.G.

Rotch Travelling Scholarship

The Rotch Travelling Scholarship will this year be awarded for a term of not less than 15 months of study and travel abroad, the amount of the prize being $2500 payable quarterly beginning October 1st.

The examination of candidates will be held early in April, but candidates must register themselves before March 1, 1937, and must fill out application blanks which will be furnished on request. The Committee of the Boston Society of Architects will make a personal investigation of all applicants, but the right is distinctly reserved to determine after personal appearance before the Committee whether or not such candidates have given adequate promise to promote the best interests of the profession and are qualified to profit by the Scholarship. Candidates failing to satisfy the Committee will not be admitted to the competition.

For further details and to obtain copies of application blanks, apply to C. H. Blackall, Secretary, 31 West St., Boston, Massachusetts.

Robert Silverman Speaks for Himself

TO THE EDITOR:—

"As a member of the Architectural Guild of America, I take exception to certain statements made by John F. St. George in your November issue.

"Since the Guild has not as yet taken a definite stand on affiliation or amalgamation with some other allied group, the statement 'that there is no evidence that our members want or would benefit from a joint organization with other groups of varied and unrelated classification,' clearly misrepresents the present situation.

"Many of the members are beginning to know the meaning of the motto 'In Union There is Strength.' They have seen success achieved due to the uniting of kindred groups for a common cause. Our wage increase is a perfect result of successful unity.

"I feel, and many of the members will concur with me in this, that we can only be assured of future success by a continuation and expansion of such a policy. A union of all technical men, with petty differences and squabbles eliminated.

"The main issue at stake for us at present is the continuance of work on WPA, and the establishing of a wage scale in private industry. These aims can't be reached by individual effort.

"In conclusion I would like to state that since Mr. St. George was not appointed by the Guild as official spokesman of its policies, his letter is not to be misconstrued as the expression of the Architectural Guild."

PLANK FACTS

now available on

We have had these Data Sheets prepared by Don Graf to save your time in detailing and specifying GYPSTEEL PLANK for floors and roofs. These Data Sheets are designed for your Data Sheet Library in the same handy, convenient form that has made this series so popular in "Pencil Points." With these sheets in your Data Book, you will have at your finger-tips the answers to your questions on the sizes, safe loads and methods of installation. These sheets are free—fill out and mail the coupon on the opposite page *now.*

GYPSTEEL PLANK

LOOKING DOWN from stern end on model of special streamlined Diesel yacht designed by Norman Bel Geddes for Axel Wenner-Gren. Streamline principles, hitherto confined for the most part in ship design to the hull alone, have here been used throughout, promising greater seaworthiness, comfort, and efficiency. In stormy, cold, or rainy weather, all decks are to be closed in, shedding water easily and providing complete protection for passengers (1934)

MASTERS OF DESIGN
2—NORMAN BEL GEDDES

BY KENNETH REID

You never know, when you step down in front of the 128 East 37th Street brownstone and open the unpretentious door marked with a simple brass plate inscribed "Norman Bel Geddes & Company," what personage of art, science, or business you may encounter in the little reception lobby beyond. It might be anyone from Gene Tunney to Max Reinhardt, from Walter Chrysler to Colonel Lindbergh, from Amelia Earhart to Frank Lloyd Wright. For this man Geddes, for whom life began with practically nothing 43 years ago in the little town of Adrian, Michigan, has by his significant work and by his positive personality drawn to himself as advisers, associates, clients, and friends scores—yea, hundreds—of leading spirits from the theatre, from the laboratory, from the arts, and from the realms of industry.

When I say that he started out with "practically nothing," I am speaking, of course, in a material sense, for he must have inherited from both of his parents qualities of physique and psyche that predestined a life of some accomplishment. His father was of Scottish and his mother of German origin. They gave him good health and the racial attributes of persistence, thoroughness, orderliness, practicality, and courage that have carried him since through many difficulties on his way to the position of world-wide eminence he now occupies in the two not wholly unrelated fields of Theatre Arts and Industrial Design.

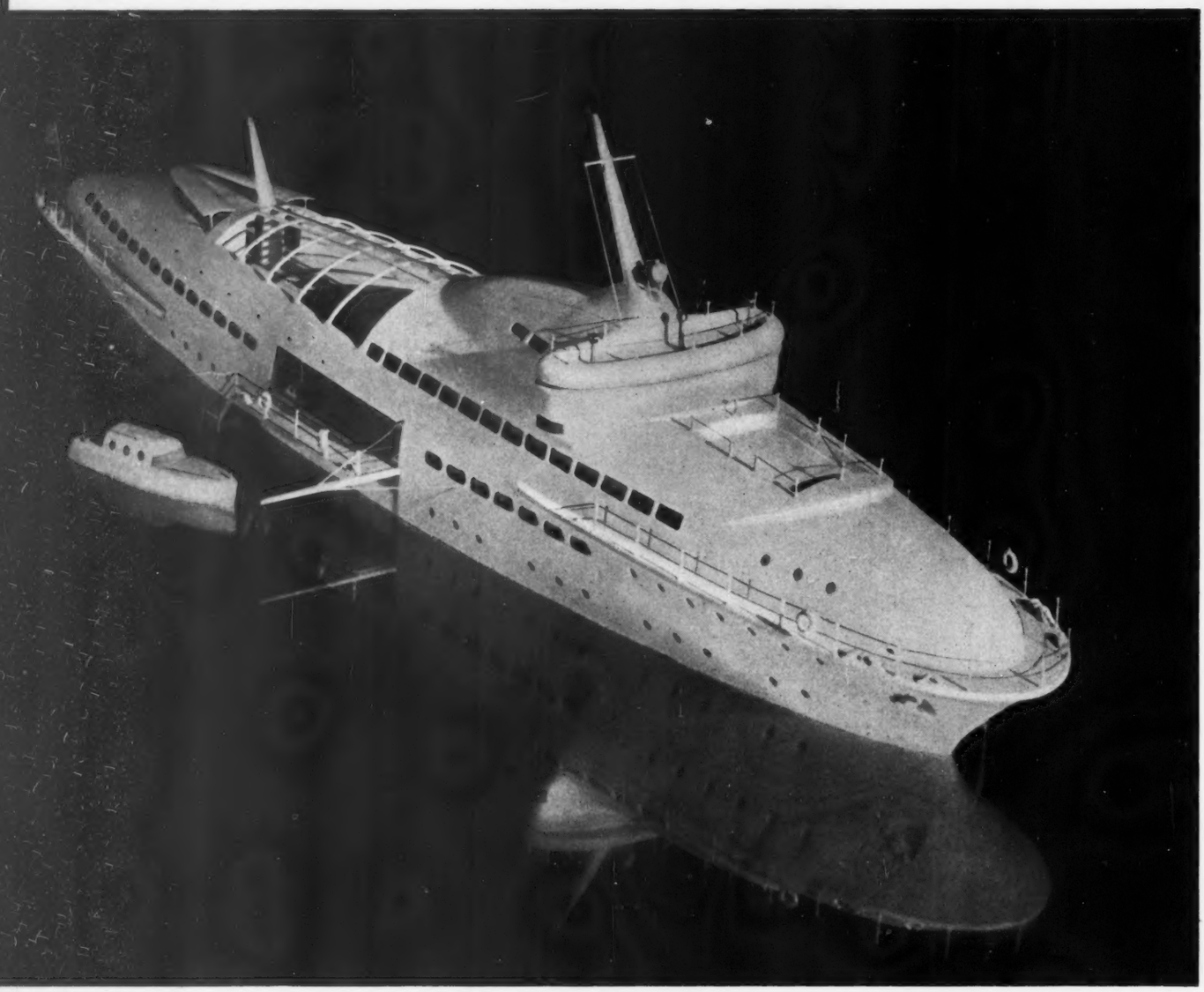
It is my feeling that to understand the man's work as a designer, which is properly the subject of this presentation, it is necessary to know something of the man himself, of his background, of the course he has traversed. A brief survey, then, of these matters is perhaps in order. They fall into a pattern.

In his own words he was "just a poor kid," forced by his father's death, which occurred when he was thirteen, to assume responsibility from then on of helping to support his mother and younger brother. His schooling was irregular, being much broken up by changes of residence, and the public schools of five states —Michigan, Ohio, Pennsylvania, Illinois, and Indiana—may boast, if they choose, of having had a part in his formal education. (New Philadelphia, Ohio, was the scene of its close in 1910 when he was expelled from the ninth grade for having drawn a caricature of the principal on the blackboard.)

During these school years he worked variously in vacations and at odd times, doing anything from delivering groceries for his grandfather's store to acting as bellboy on a lake steamer that ran between Cleveland and Buffalo. On one trip of this boat he met and made friends with Keller, the famous magician, who taught him sleight-of-hand tricks and, in so doing, perhaps whetted his already budding interest in the stage. Young Geddes worked diligently at the sleight-of-hand, practicing up between visits to Buffalo to see Keller, and finally appeared successfully for a summer in vaudeville in small towns of Ohio, where his family then lived, as "Zedsky, the Boy Magician." A later essay as "Bob Blake, Eccentric Comedian," however, failed dismally. These ventures, please observe, antedated his expulsion from school.

That principal must have been either an insufferable "stuffed shirt" or an irresistible "cartoonist's friend," because James Donahay, well-known artist on the staff of the Cleveland Plaindealer, had some years previously at the same school obeyed the same urge to caricature that had caused Geddes' downfall. He had enjoyed the same fate and, hearing about Geddes, wrote him sympathetically offering to help him. What's more, he did help him, and enrolled the boy in the Cleveland School of Art. For some reason, however, Geddes was not happy at that school and left after three months, impatient of the restraints to his progress imposed by a fixed curriculum.

He went to Chicago, where he attended the Art Institute briefly until he met Hendrik Lund, the celebrated Norwegian painter, who took an interest in him and advised him to leave art school and go his own way. Wishing to continue his art studies on his own, and



THIS VIEW of Mr. Geddes' yacht model and the one opposite show her from forward with decks open and then completely closed. The ship was designed to be 231' long with 37' beam and 12'6" draft. She is to displace 1400 tons and will carry 8 passengers, 30 crew, 2 personal servants, and a nurse and secretary. Her speed will be 16 knots and her cruising radius 10,000 miles. In this view the convertible lounge deck cover is in position as an awning while the sun deck is entirely open. The launch door amidship is open with a launch alongside. The forward observation deck has been lowered for passenger use with its demountable railing in place. This design is a fine example of Geddes' insistence upon thinking a problem through completely, not being stopped by traditional limitations, but applying to the whole and to all details the full fruits of available scientific knowledge to the end that the completed thing shall be as perfectly formed to its purpose as he and his staff can make it

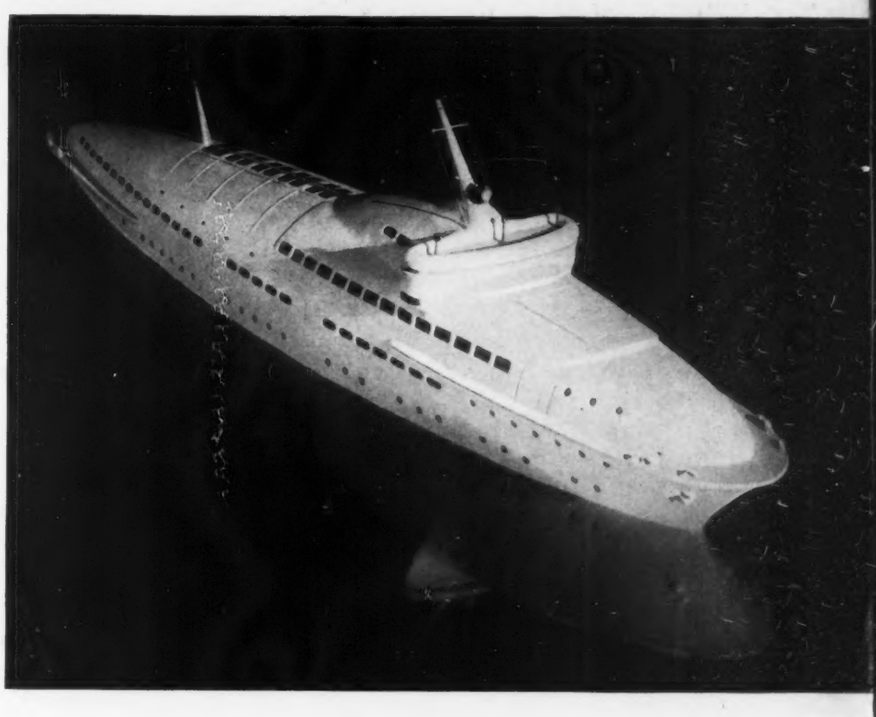
feeling the need of a better working knowledge of anatomy, he turned to—of all places—the morgue! The first few visits were a bit trying, as may be imagined, but after that he got along famously, repairing to the ghastly studio nightly over a considerable period until he could draw the human figure, in the most contorted position and from any point of view, constructively and correctly.

During this period he worked as a bus-boy in a restaurant in exchange for his meals and also as a super for the Chicago Opera Company. He finally got his first job as a designer with the Barnes-Crosby Company doing advertising illustrations at a salary of $3.00 a week. Six weeks of this was enough. With Lund's encouragement he turned to drawing and painting portraits from life, seeking and obtaining commissions to do such distinguished subjects as Mme. Schumann-Heink, Frederick Stock, Brand Whitlock, Titta Ruffo, John Wanamaker, and Edwin Drummond Libby. Incidentally, his engaging personality and the youthful enthusiasm and skill with which he carried out these commissions won the real and lasting friendship of these celebrities. His contact with them helped him to eliminate from his system all traces of youthful shyness in the presence of greatness and established his confidence in himself as the peer of any man—a valuable characteristic.

Times became a little dull in the free-lance art field, necessitating an interlude of more substantial earnings as manager of a laundry in Ann Arbor, Michigan. Thereafter, however, in 1914, Geddes went to Detroit and entered into an association with the Peninsular Engraving Company wherein he received no salary but was allowed to compete with their designers and was paid for successful efforts. He won the majority of the competitions he entered and after six months was made Art Director of the company. The assured livelihood that went with this position freed him from pressure and allowed him to indulge his persistent interest in the theatre where his imagination had more leeway. He began to write plays and plan their staging. It was all done on paper and in his mind but he worked over the problems just as thoroughly as though they were really in production. During these studies he originated the "Diagonal Axis Theatre."

In 1915 he graduated into comparative affluence when the Barnes-Crosby Company (which had employed him at $3.00 a week in Chicago) made him Manager of its new Detroit branch office at $125 a week and a 5% commission on sales besides. In that year also he sold his play of American Indian life, "Thunderbird," to Aline Barnsdall of Los Angeles.

Geddes was devoting so much of his spare time now to his writing of plays and his study of the theatre that his employers felt that these activities were taking his best attention away from their business. They issued an ultimatum. Either he must give up the theatre or lose his job. Though he had just taken on the added responsibility of a wife, he sensed that his real



vocation was the drama and its production and chose to risk his future in the work he really loved. The sale of his play gave him the chance he needed. He went to Los Angeles to assist in the staging of his own and five other plays. "Thunderbird," however, was postponed to the following season and was never produced.

During 1916 he designed settings and costumes for nine plays, profiting greatly by the experience and gaining his first taste of practical theatre technique. Simultaneously, he introduced for the first time the use of focus spot lamps as the sole means of lighting the stage.

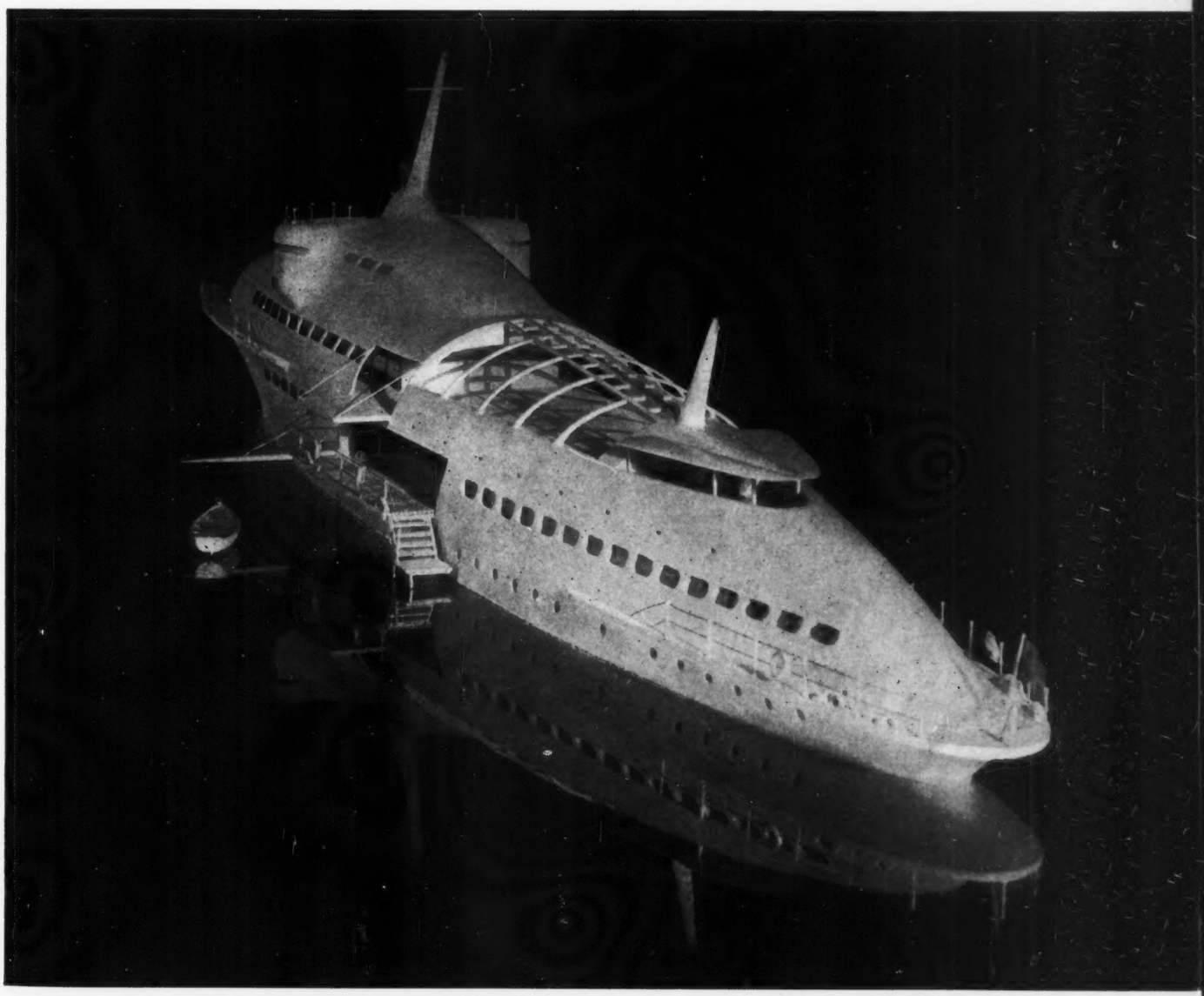
From that time on Geddes' principal interest for ten years lay in the theatre. When work failed in the west he introduced himself by transcontinental telegraph to Otto H. Kahn in New York so persuasively that Kahn sent him expense money to move himself and his family to the east where he was turned over to Gatti-Casazza at the Metropolitan and put to work designing scenery for the production of *Shanewis,* an American opera. This led to other operas and stage presentations almost without cessation up to the present moment.

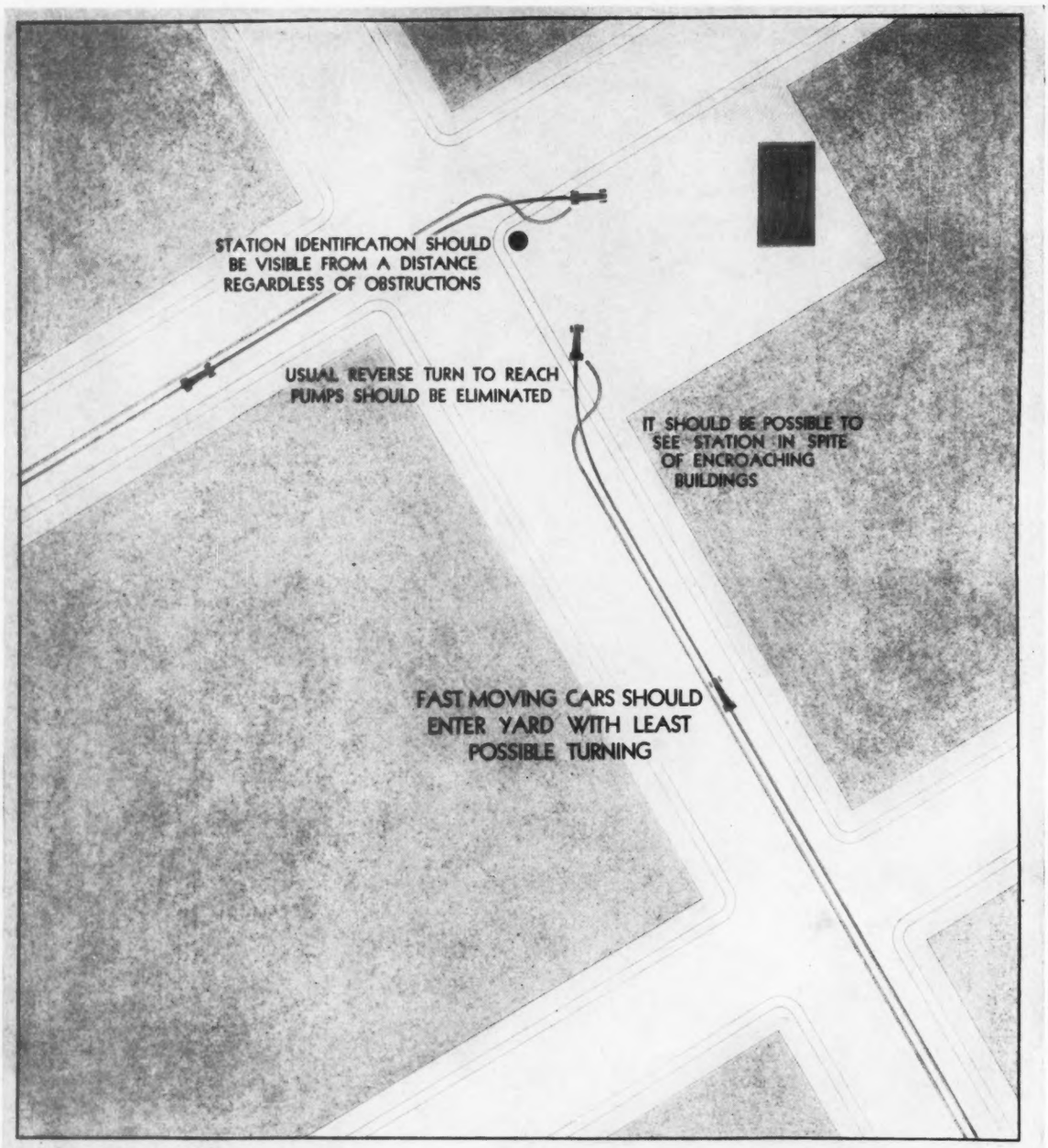
In the theatre his work is so generally well known that it need not concern us here in detail. Suffice it to say that he has in the last twenty years played one vital part or another in about 180 theatrical productions, many of them outstanding successes. *The Divine Comedy, The Miracle, Ziegfeld Follies, Lysistrata, Hamlet, Lady Be Good,* the current *Dead End*, and *The Eternal Road,* just launched, spring to mind as effective examples of his masterly touch. He has been designer of sets, costumes, and lighting and architect of the theatres themselves; he has been actor, editor, playwright, director, producer, and inventor of stage appliances and machinery; he has contributed important ideas that have advanced the art and technique of the stage. Few, if any, living men have had such all-round experience in every phase of dramatic presentation.

About 1927 he took up what was at first a hobby and developed it into a second career which has since proceeded parallel with the first. It was in the young profession of Industrial Design.

In the theatre he had been creating beautiful pictures, making compositions with line, mass, color, light, movement, ideas. Now he was to seek another type of beauty, the beauty of clean, purposeful form, of "perfection for use," as applied to industrial products. In the theatre his designs were often fixed in period by the context and consequently were appropriately based on historical forms. In this new activity everything was fitted to contemporary life and the forms, materials, and processes had to be those of today and, so far as could be foreseen, of tomorrow. Only if an old form or material or process could not be improved upon for the purpose sought, might it be used. The whole mass of scientific and technical knowledge was to be drawn upon to the limit in solving the problems of the new

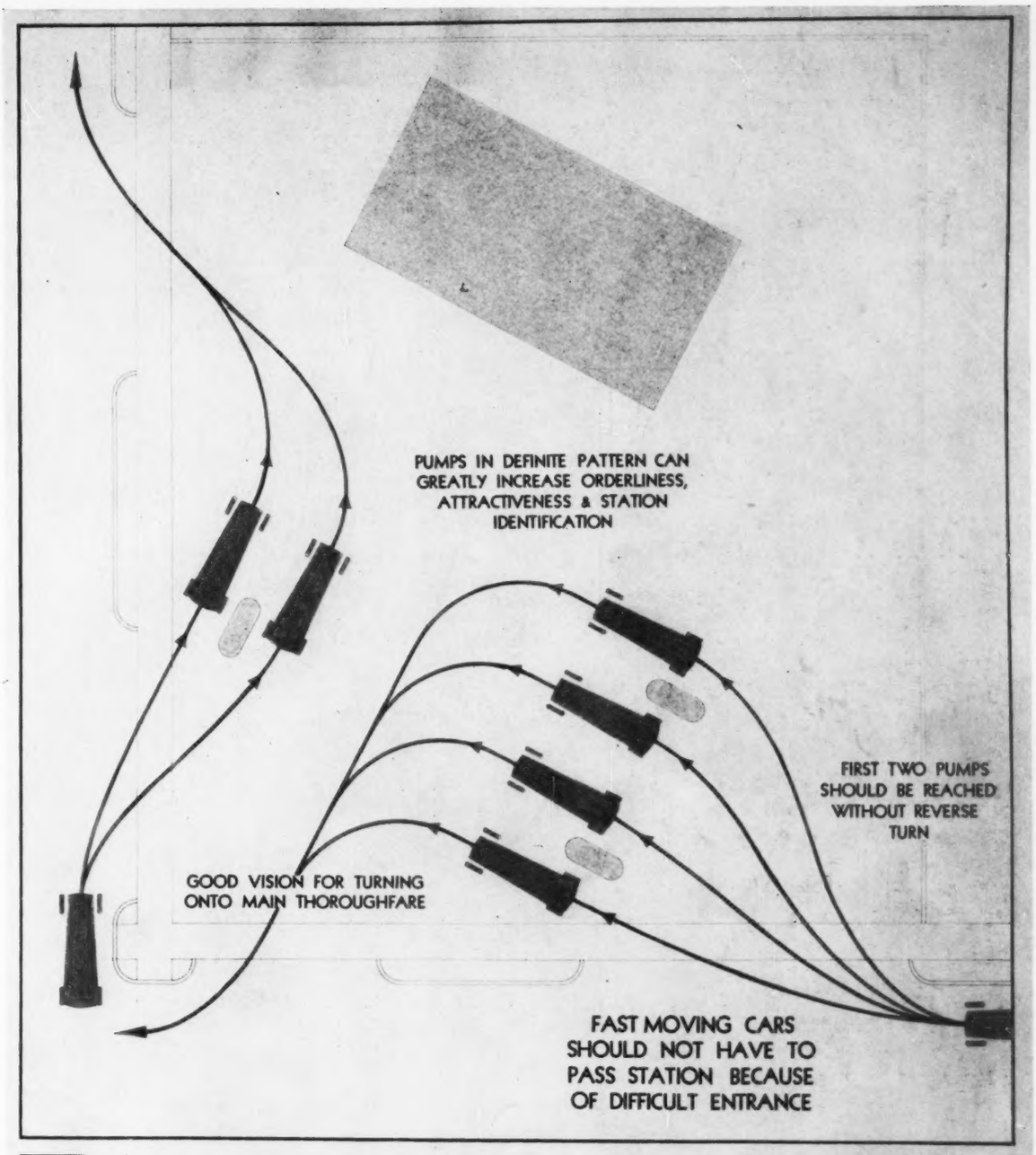
HERE AND ON the facing page are the open and shut views of the yacht model as seen from the port side astern. Every thinkable provision has been made for comfort and safety. The deck covers are insulated and the interior is to be heated and air conditioned, the forward mast serving as air intake and the after mast as exhaust for both engine room and air conditioning system. Partitions of passenger accommodations and social rooms are to be soundproof and the most modern fire protection, detection, and extinguishing apparatus will be installed. Owner's and crew's lifeboats and launches will be carried inside the shell and are arranged to be loaded inside and launched from either side through the doors which lower to the horizontal position where they also act as landing platforms. Passenger accommodations will be larger than usual on conventional yachts of the same tonnage, Mr. Geddes having provided about 2100 square feet for the four social rooms and 1100 for staterooms




STATION IDENTIFICATION SHOULD BE VISIBLE FROM A DISTANCE REGARDLESS OF OBSTRUCTIONS
USUAL REVERSE TURN TO REACH PUMPS SHOULD BE ELIMINATED
IT SHOULD BE POSSIBLE TO SEE STATION IN SPITE OF ENCROACHING BUILDINGS
FAST MOVING CARS SHOULD ENTER YARD WITH LEAST POSSIBLE TURNING

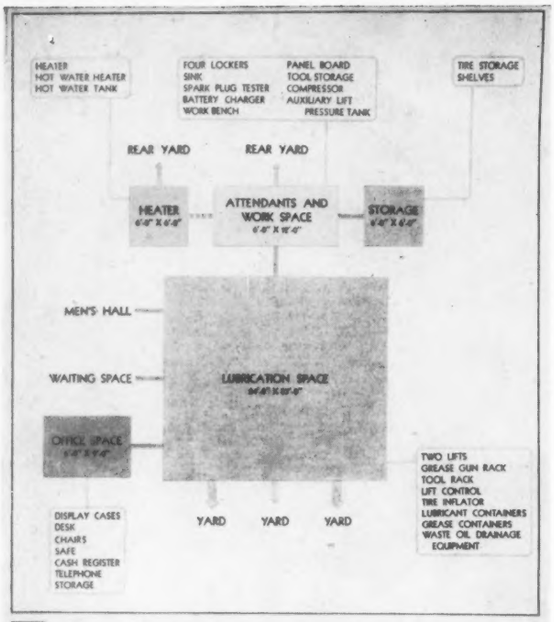
I STATION SHOULD BE SEEN AND IMMEDIATELY RECOGNIZED IN TIME TO DRIVE IN

A THOROUGH STUDY of service stations made by Geddes in 1934 for the Socony Vacuum Oil Company, Inc., resulted in a number of recommendations which were placed graphically before busy officials and directors by means of a series of twenty-four charts of which the above is the first. Each chart was designed to make one point of the findings immediately clear in simple direct terms. The whole set covered the basic points of a complex report. Among its conclusions were contained the recommendation that future stations should be of prefabricated construction, mostly salvageable, and that they should be so designed as to help increase the lubrication business and the sale of specialty articles as well as the regular gasoline trade. The key design of a station embodying the suggested improvements was included with the report and a model built to visualize how it would work, several views of which are shown on following pages

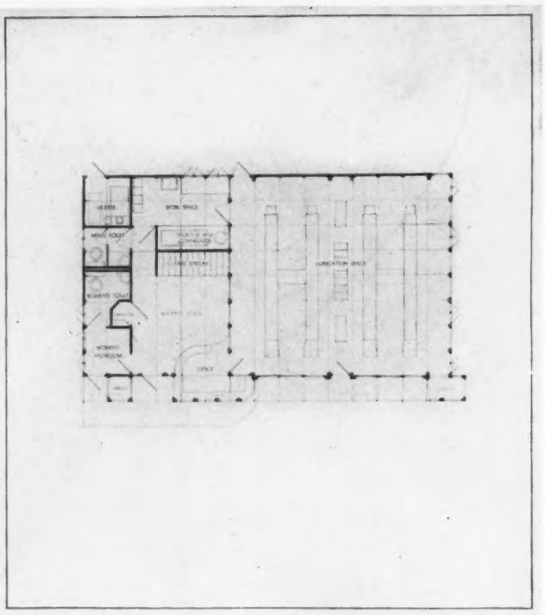

PUMPS IN DEFINITE PATTERN CAN GREATLY INCREASE ORDERLINESS, ATTRACTIVENESS & STATION IDENTIFICATION
FIRST TWO PUMPS SHOULD BE REACHED WITHOUT REVERSE TURN
GOOD VISION FOR TURNING ONTO MAIN THOROUGHFARE
FAST MOVING CARS SHOULD NOT HAVE TO PASS STATION BECAUSE OF DIFFICULT ENTRANCE

2 EASE OF ACCESS TO YARD SHOULD HAVE PREFERENCE OVER EASE OF EXIT

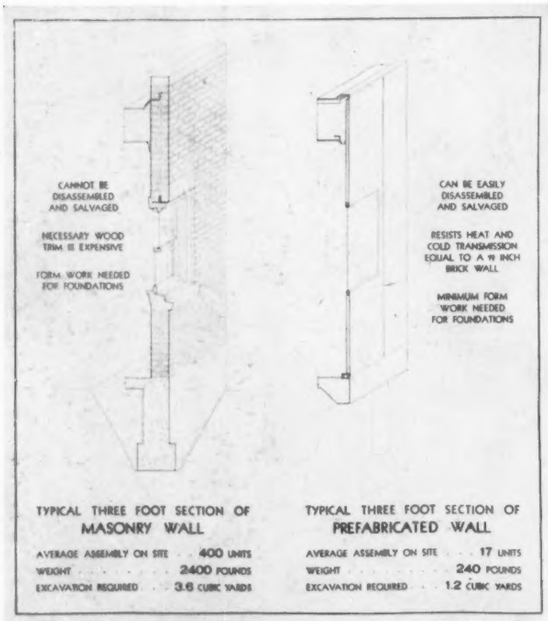
THE ALMOST primer-like simplicity of these charts which Mr. Geddes uses so effectively in his dealings with clients has sound psychological basis. The method promotes clear understanding by all parties and focusses attention upon one point at a time in such a way that it can be quickly grasped. Nothing essential can be overlooked as it might if a complete drawing of the whole scheme were laid before the clients for discussion. The adoption of such a technique came naturally perhaps to one so long associated with the theatre but the fundamental thought behind it could well be used by many an architect who has suffered embarrassment and even loss where a client has not understood something on his plans. In this service station study it appears reasonably certain that every innovation visible on the completed model was there because it had been logically worked out as a feature that would contribute to better business



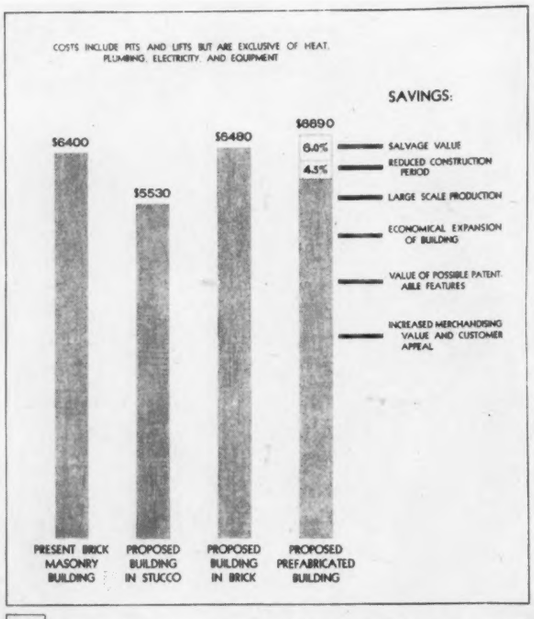
9 PROPER RELATION & CIRCULATION OF SERVICE SPACES ARE ESSENTIAL TO AN EFFICIENT EFFECTIVE STATION



13 COMPLETE DEVELOPMENT OF TYPICAL PLAN USING STANDARDIZED UNIT CONSTRUCTION

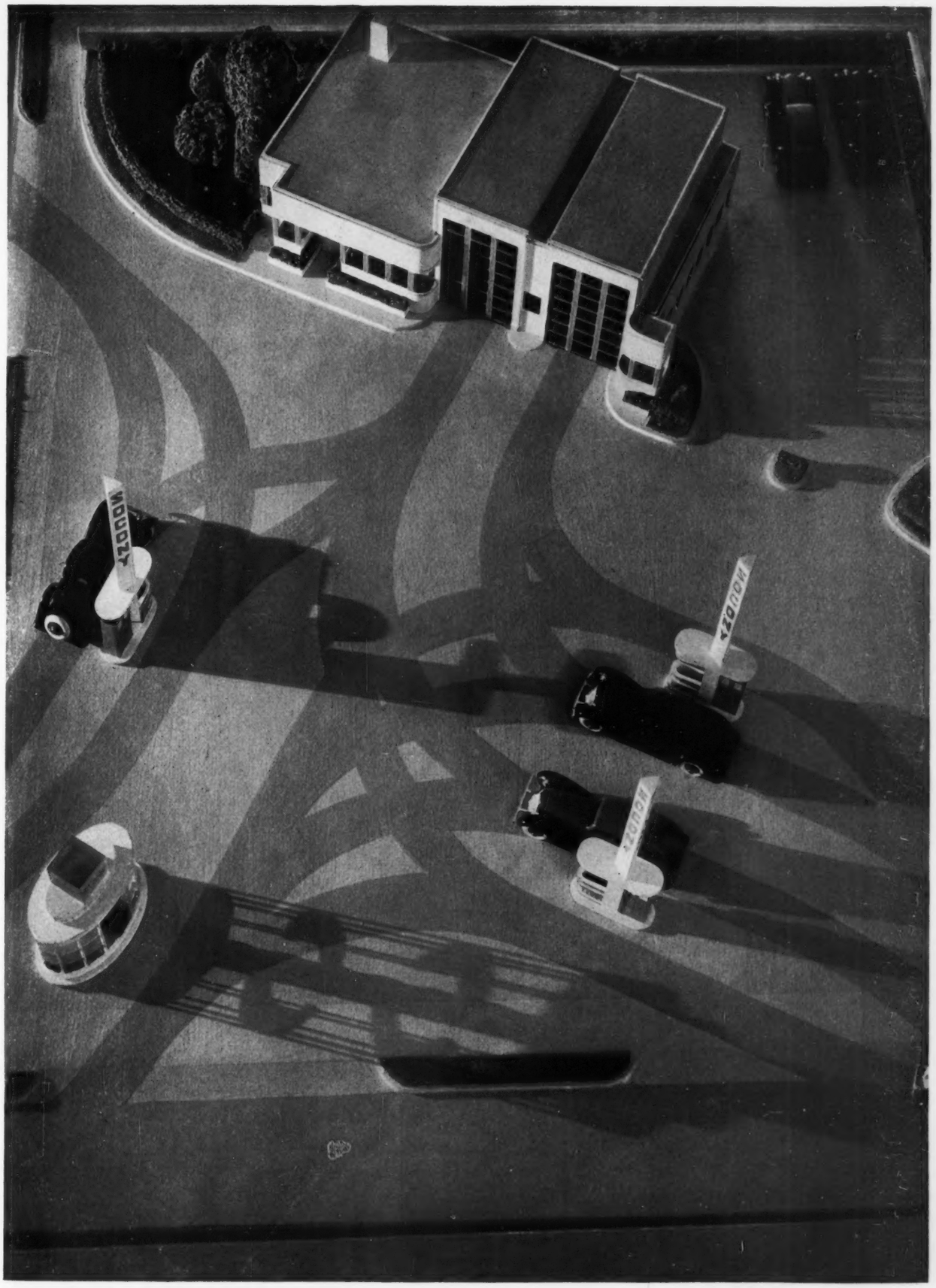

CANNOT BE DISASSEMBLED AND SALVAGED
NECESSARY WOOD TRIM IS EXPENSIVE
FORM WORK NEEDED FOR FOUNDATIONS
CAN BE EASILY DISASSEMBLED AND SALVAGED
RESISTS HEAT AND COLD TRANSMISSION EQUAL TO A 19 INCH BRICK WALL
MINIMUM FORM WORK NEEDED FOR FOUNDATIONS
TYPICAL THREE FOOT SECTION OF MASONRY WALL
AVERAGE ASSEMBLY ON SITE 400 UNITS
WEIGHT 2400 POUNDS
EXCAVATION REQUIRED 3.6 CUBIC YARDS
TYPICAL THREE FOOT SECTION OF PREFABRICATED WALL
AVERAGE ASSEMBLY ON SITE 17 UNITS
WEIGHT 240 POUNDS
EXCAVATION REQUIRED 1.2 CUBIC YARDS

15 PROPOSED PREFABRICATED METHOD OF BUILDING OFFERS GREAT ADVANTAGES IN SIMPLICITY OF ERECTION AND SALVAGEABILITY



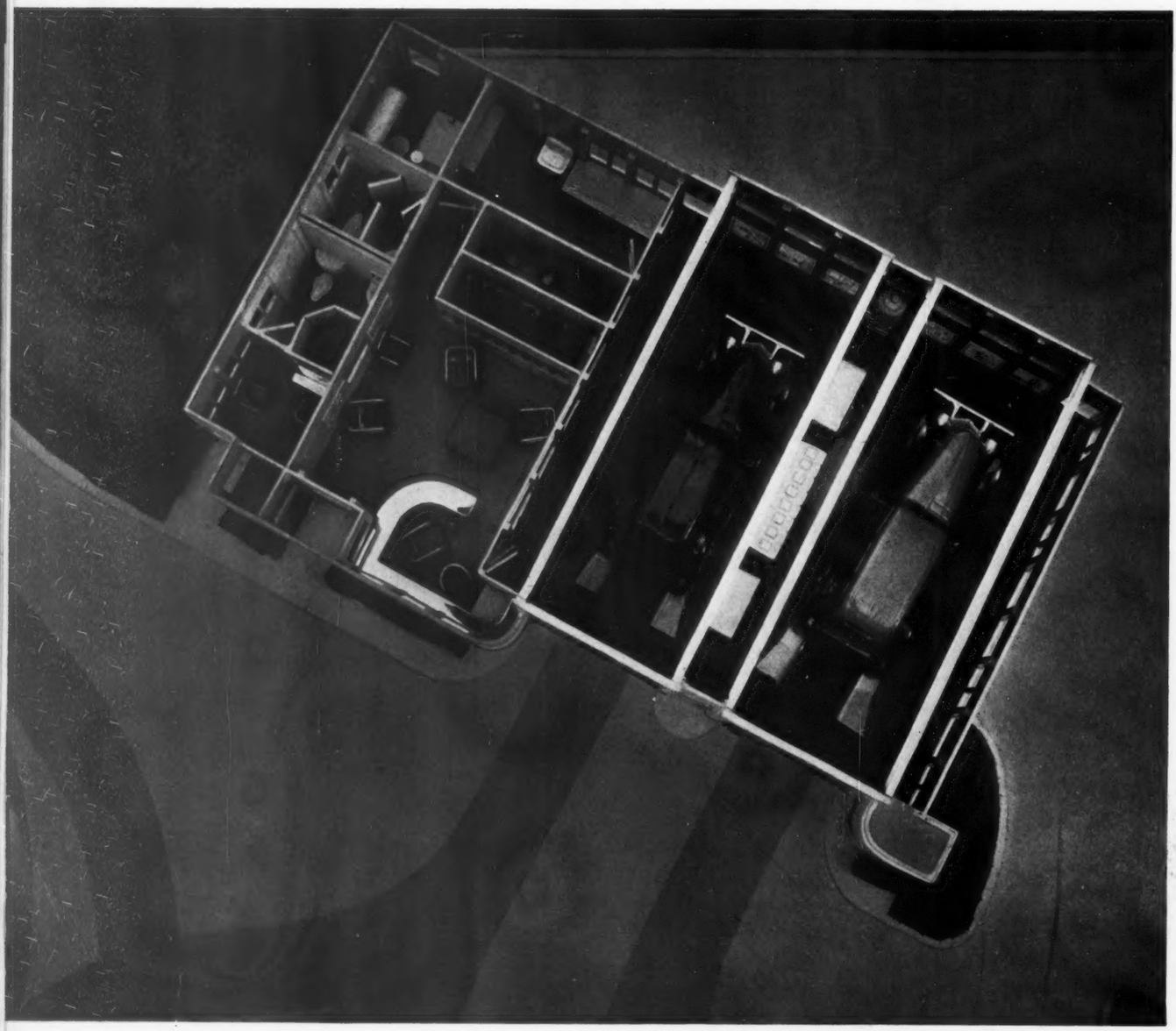
24 PREFABRICATED CONSTRUCTION WOULD INAUGURATE A PROGRESSIVE PROGRAM OF IMPORTANT COLLATERAL SAVINGS

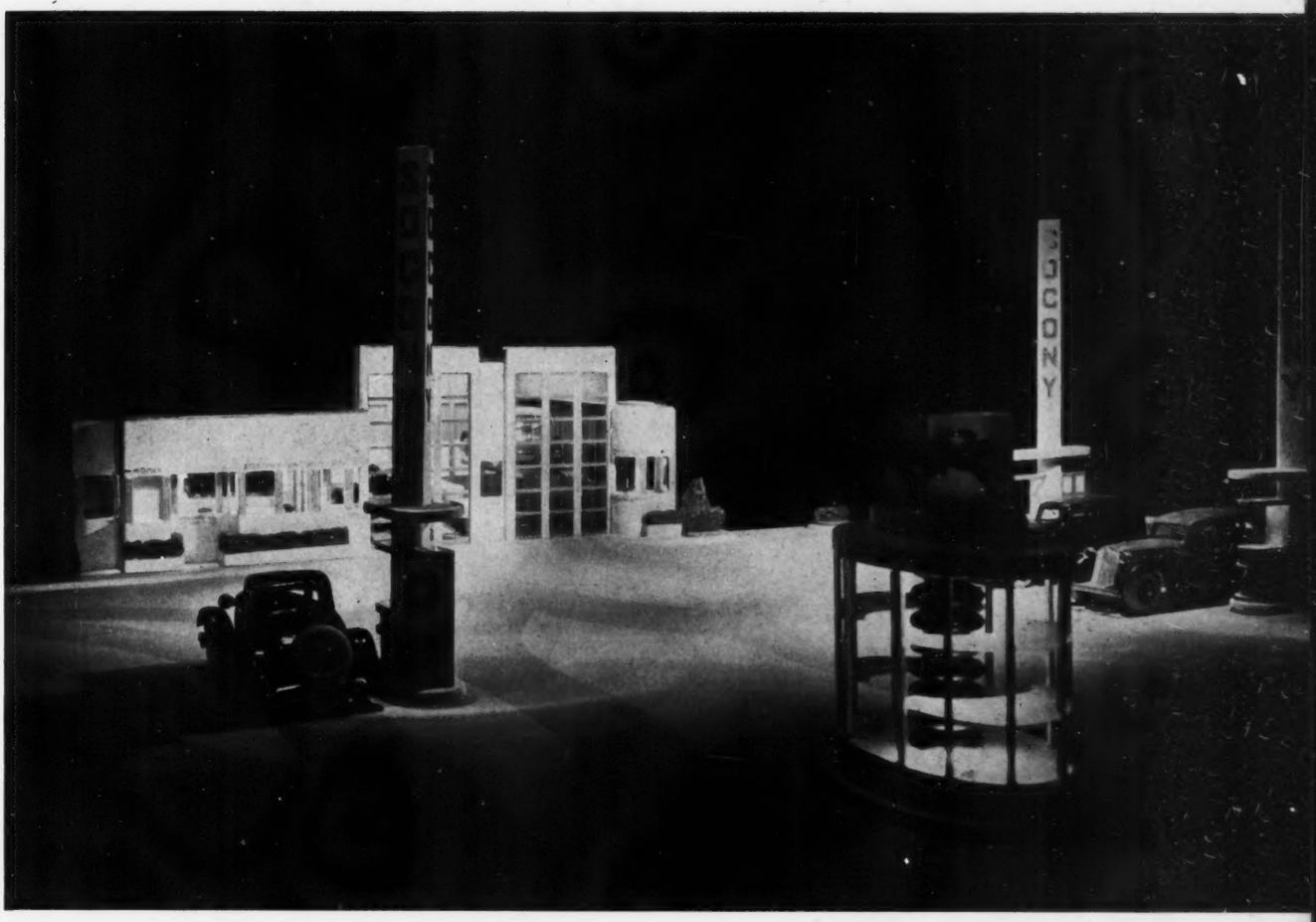
FOUR MORE of the twenty-four Socony charts prepared by Mr. Geddes show that the approach to the problem was economic as well as architectural. The typical plan was clearly based on a functional analysis and the argument for using a light prefabricated construction would not likely admit of opposition by a group of business men. The view of the model on the opposite page shows lines or paths of contrasting colored paving running from the points where the customer's car enters the yard, indicating logical routes to the pumps, to the lubrication space, and to the exits. The virtue of placing the pumps diagonally as well as the building itself is clearly evident when this circulation is considered. Note that from every pump there is a clear view of the lubrication space and other service features including the women's rest room entrance



A view looking down on model of Norman Bel Geddes' design for a Socony Service Station on a corner lot

THE SERVICE STATION model with its roof removed gives a clear picture of its inner arrangements. The central point of the station is the office space from which all points in the yard, the lubrication space, the rest room entrances, and the waiting room are visible. The attendant on duty there may thus promptly know where he is needed. The lubrication space connects with the office, working space, and storage spaces. The lubrication area was made the dominant feature of the plan because of the fundamental goal of promoting lubrication sales by every means. Selective display space was planned along the path of the prospective customer, whether he be at the pump in his car, in the waiting room, in the "lubritorium," or merely walking by on the sidewalk. Another evidence of Mr. Geddes' thoroughness in presenting his ideas completely and dramatically is to be seen in the arrangement of the model for the study of night lighting effects



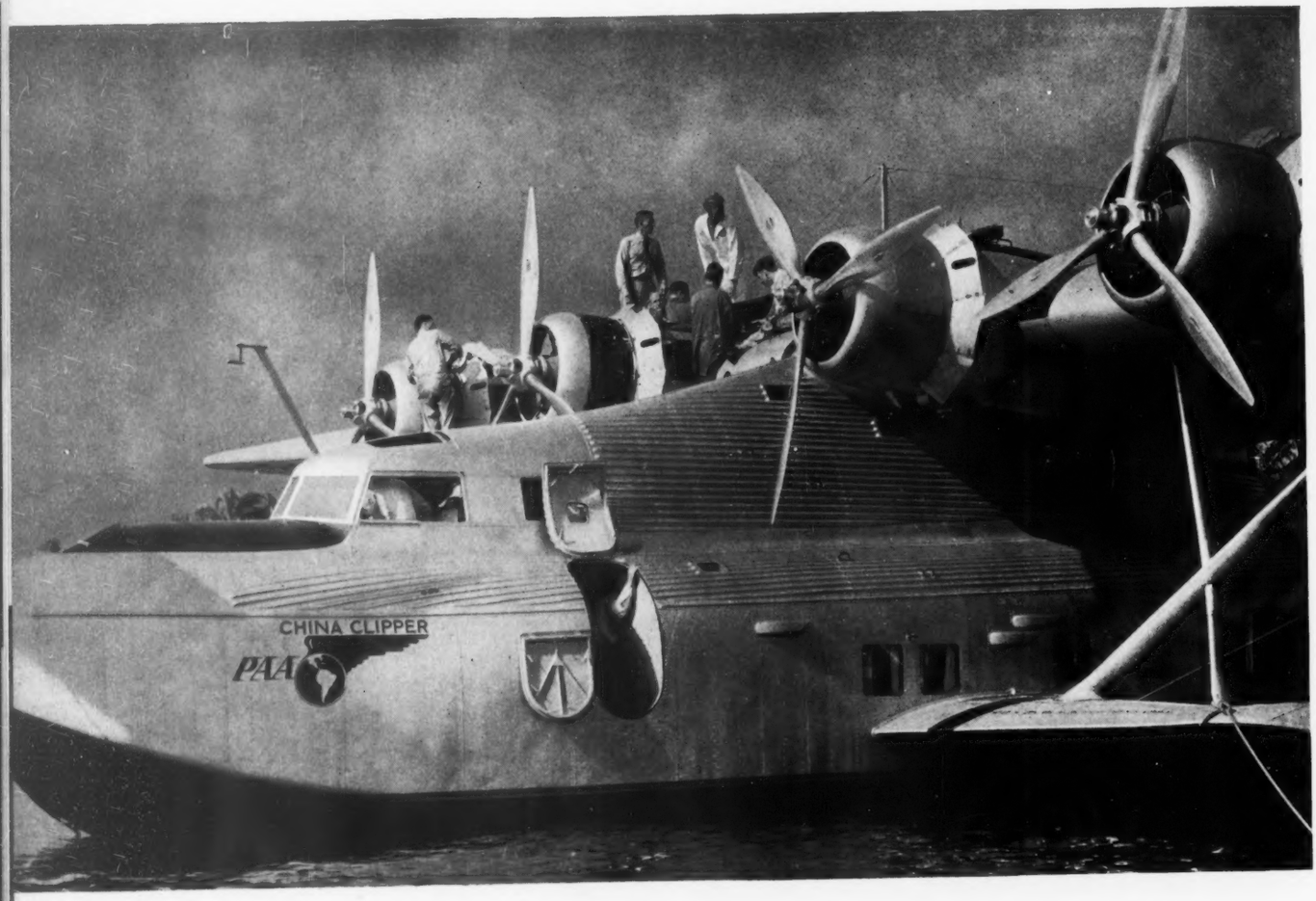


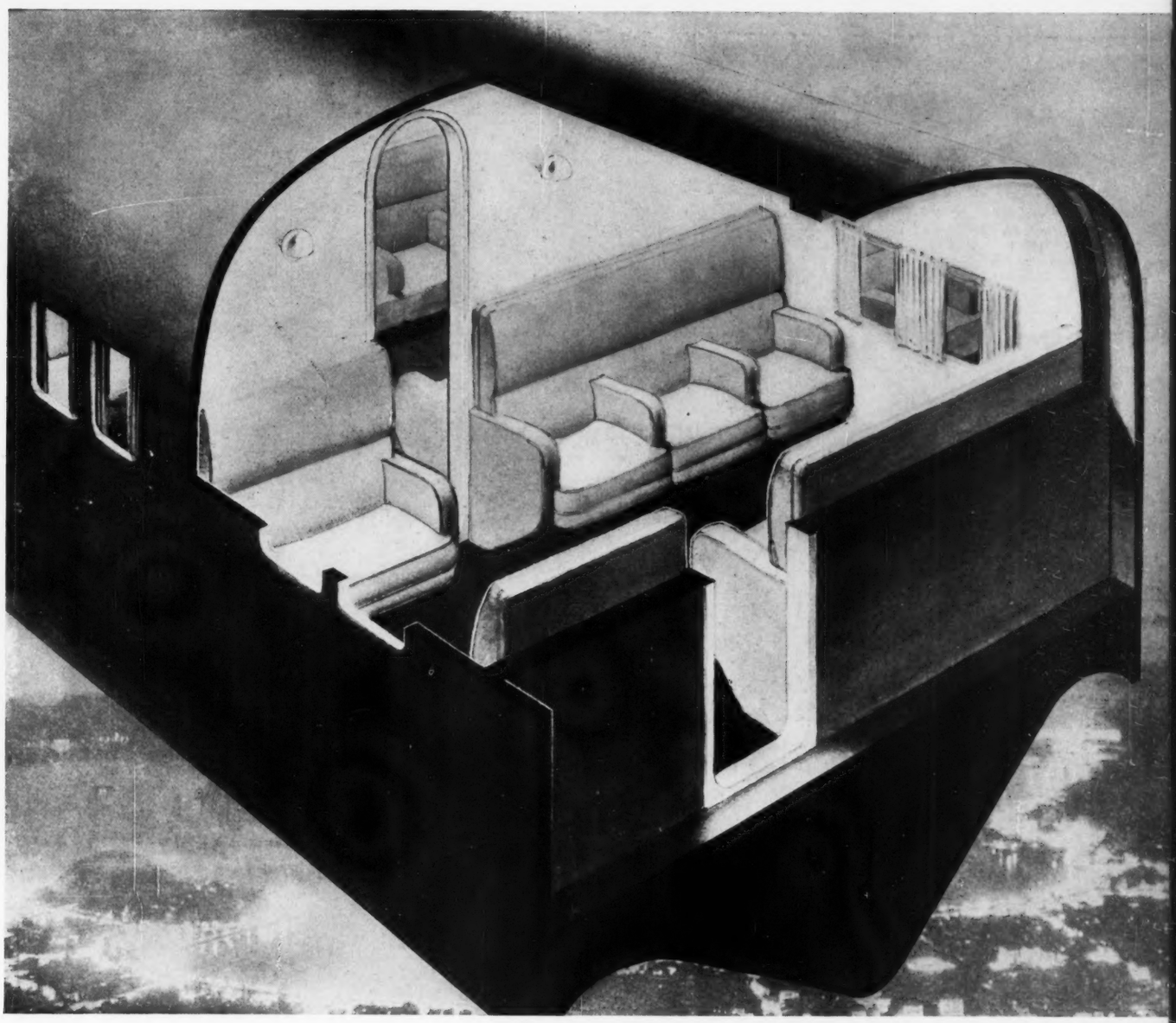
profession. It was a natural challenge to Geddes who had always been intensely attracted to anything involving the reduction of complexity to simplicity and order.

From the theatre he had learned the vital necessity of well integrated organization and had also learned how to build such an organization and make it work. He speedily gathered around him a carefully selected staff (entirely separate from the group working with him on theatre problems) composed of young, talented, well trained designers, draftsmen, and technicians. None were over thirty-five years of age and the majority were much younger, since Geddes wanted individuals with a fresh point of view, not wedded strongly to traditional ideas. He had a chance to pick from among the best young graduates of architectural and engineering schools, because the magic of his name and reputation made the jobs attractive to youth in search of a career. Incidentally, the force that he has had during the years since 1927 has fluctuated in numbers between fifteen and seventy staff members, depending upon the volume of industrial design work in hand. The young men and women found that experience in his shop opened the door to good opportunities elsewhere when it became necessary for him to let them go. They like him and he likes them. Two of his leading competitors in the industrial field are products of his own and in the theatre the better half of the young generation of designers started in his shop.

His establishment already included a drafting and design room, a well equipped model shop, and even a small printing plant, for he had long made printing a hobby and liked to control the design and quality of every piece of printed matter that went out of his office. The equipment he had sufficed to begin his new venture with, but of course was added to and extended as need arose.

The work was as highly systemized as that of a modern manufacturing plant, everything conforming to a daily schedule worked out in advance and lived up to religiously. He developed a unique control board on which, spread over an area of some forty square feet, could be seen instantly what each member of his organization, himself included, should be doing on any day for three months ahead. He built up a technical file capable of giving him or his assistants immediate access to the most


CHINA CLIPPER
PAA



WHEN HE UNDERTOOK the design of interiors and equipment for the China Clipper of the Pan American Airways Pacific Service in 1934, Geddes was allowed only eight pounds per passenger with which to provide daytime accommodations for 52 (including 6 crew), sleeping accommodations for 18, and two complete lavatories. Naturally, everything was designed for light construction and for quick convertibility from day to night use. A unique and efficient ventilation system provides conditioned air for seats which become beds larger than pullman berths, while the Lounge table converts to four wash basins with hot and cold running water. The covers of walls, ceiling, and furniture, made of light fabric, are completely removable by means of zippers and Dzus fasteners, permitting them to be cleaned easily after each trip. The Galley is the first real kitchen on any airplane, with electric range, refrigerator, built-in shock-absorbing wine closet, etc. It provides full-course hot meals and serves as refreshment bar. For the floors was used brown waxed flaked cork, which is easy to clean and aids soundproofing. The walls and ceiling are of a light, warm gray, cotton wing fabric, pigmented with acetate wing dope. The furniture covering is a diagonal weave brown mohair with white piping, while the night curtains are of cream-colored crash with a brown plaid pattern. The general effect is surprisingly and pleasantly colorful.

A SCENE FROM Dante's "Divine Comedy" designed by Mr. Geddes in 1920. The stage is circular, rising in a series of broken terraces, flanked by four huge towers of irregular shape, and with a central descending pit. By carefully arranged lighting, whole sections of the stage may be blotted out or thrown into fantastic relief, so that a constantly moving variety of form and effect is obtained throughout the performance, eliminating the need of ordinary scenery. During the action of the Inferno, the lighting comes from the pit. During Purgatory, it comes from behind, shooting heavenward like a display of the aurora; and during Paradise the lighting takes on a greater and greater diffusion, beginning from above and spreading until finally, as Dante exclaims, "O abundant Grace, by the Eternal Light, let my sight be consumed!", it is turned directly into the audience with blinding intensity.

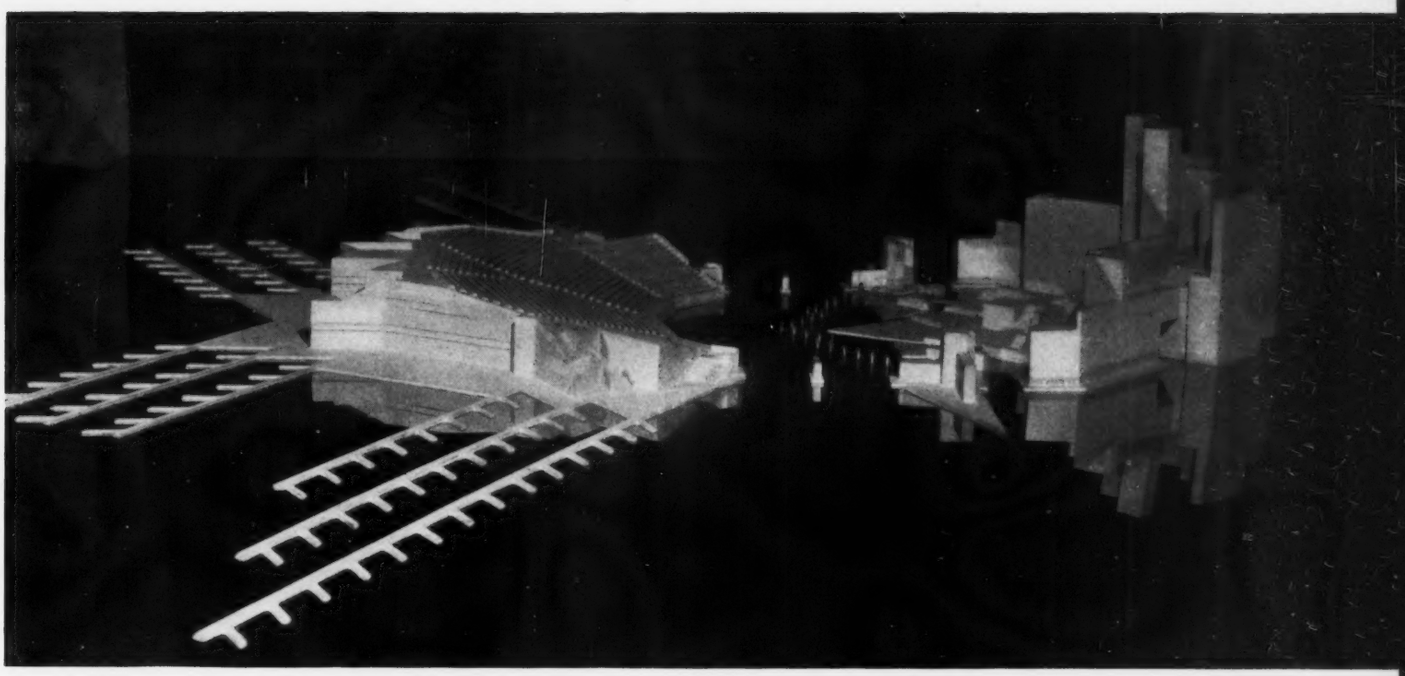
ON THE FACING PAGE is a scene from "Dead End," Sidney Kingsley's play, designed and produced by Mr. Geddes in October, 1935, and still running in New York, with a duplicate company in Philadelphia. This superbly realistic setting of a dead-end street terminates in a dingy wharf from which the young hoodlums of the neighborhood dive and on which they develop their lives. Flanked by dismal tenements and by a palatial New York apartment, this dead-end street is a symbol of the utter hopelessness of the desperately poor. The setting itself is helpful both to the writing of the playwright and to the acting of the cast. But effective as the setting and acting are, they need the realistic sound effects, introduced by Mr. Geddes, which give the impression of lapping water, the hum of waterfront and street traffic up the block, to greatly heighten the verity of the whole. These two designs afford a sharp contrast.

authoritative and up to date information obtainable on any subject pertinent to industrial design. Over a period of years he had assembled a complete working library and subscribed to over a hundred domestic and foreign periodicals dealing with technical subjects. As fast as they appeared these were apportioned among different staff members for study and digest. He himself scanned them all with special attention to items marked for him as containing important news about materials and processes.

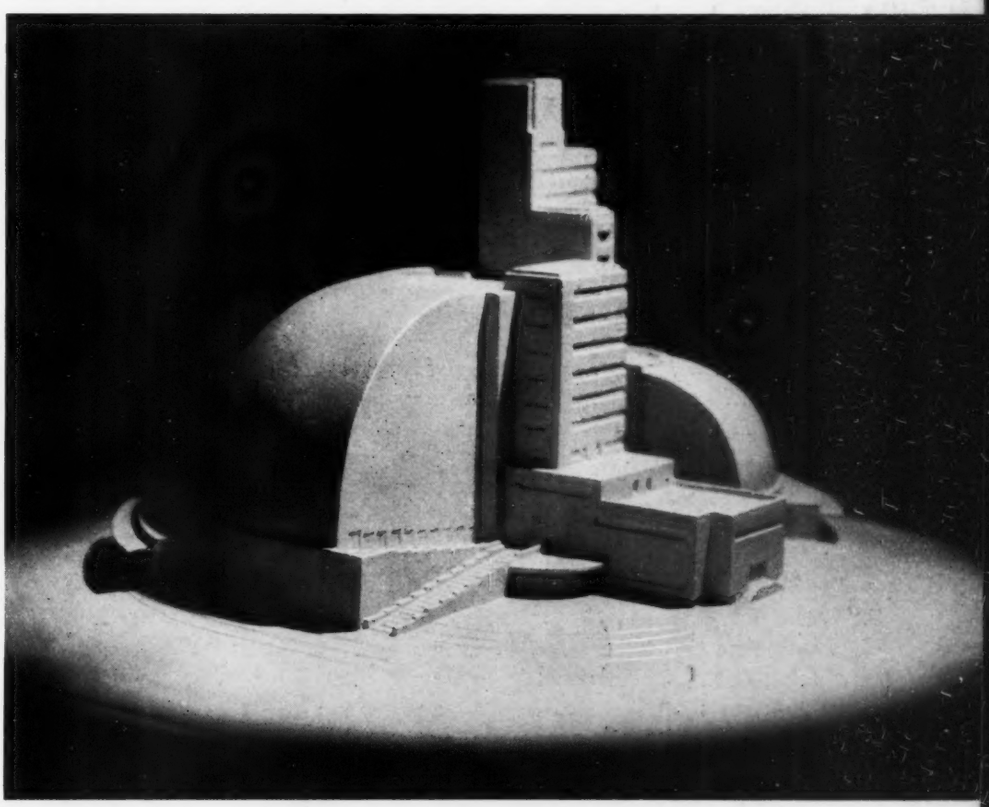
His first industrial job was, of course, from the client who had started him off in this new field—his friend, the late Ray Graham, of the Graham-Paige Company—for whom he designed a series of motor car bodies which were, however, never adapted. This job was quickly followed by others. Most clients came to him. Others he sought out, armed with ideas for the improvement of their products. All of his clients were leaders in their respective specialties. Although he never had, or wanted, more than a half dozen clients at one time his shop hummed with activity. His organization expanded.

His method of carrying on the work is described in some detail in his book, "Horizons," published in 1932. At the beginning of a new problem he gathers together specialized members of his staff whose abilities apply to it. Sometimes he brings in from outside special consultants, and the whole thing is discussed generally in all its phases. At that time the specific objectives and the means of achieving those objectives are determined and agreed upon and a time and budget schedule is

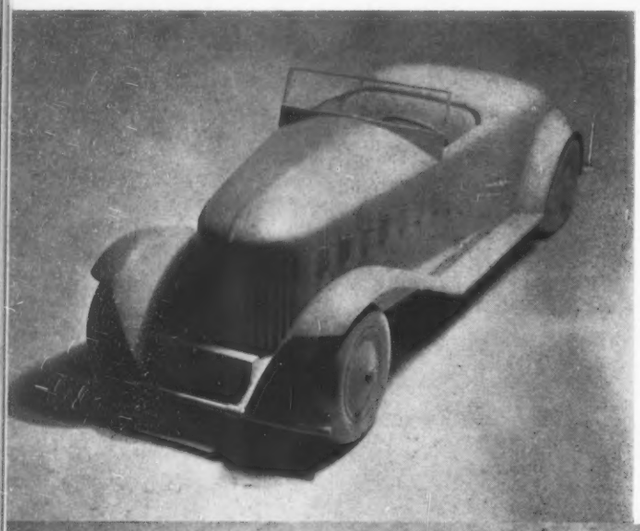
Two views of Mr. Geddes' setting for "The Miracle," as staged by Max Reinhardt in 1924 for Morris Gest at the Century Theater



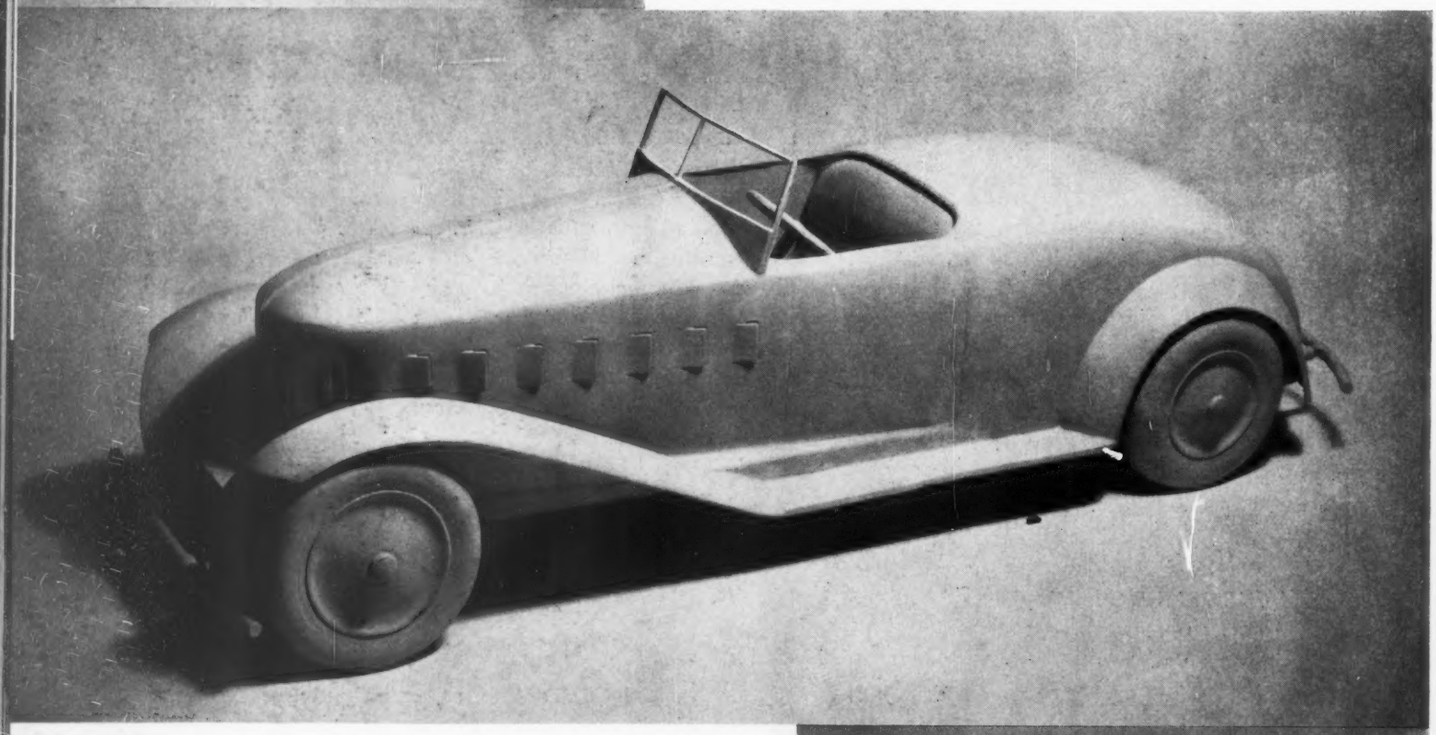
ON THIS PAGE are shown views of the models of two projects developed by Mr. Geddes in 1929 when he was acting as consultant to the Architectural Commission of the Chicago World's Fair. The first is his Water Pageant Theatre designed as a setting for spectacular performances in novel surroundings on a lake. The auditorium, at the left, separated from the stage by a canal, was arranged to seat two thousand people and was to be provided with radiating piers and landing docks for canoes and small boats. The whole conception was highly imaginative yet practical and appropriate for such a festive occasion as a fair. Below is Geddes' scheme for a Dramatic Center for the fair, including in one structure a large theatre to seat 1700, a small theatre to seat 500, a children's theatre to seat 260, a cabaret and roof garden with capacity for 250 guests, and all the necessary auxiliary service spaces



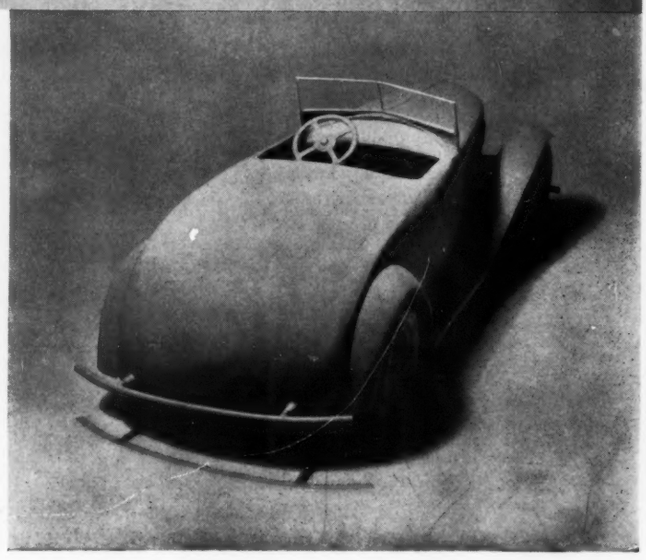
"THE MIRACLE," two views of which are shown opposite, was a truly ambitious undertaking carried through with the passion for completeness in every detail which is characteristic of Geddes. The entire theatre interior, auditorium as well as stage, was built over with solid and substantial materials into a convincing semblance of a gothic cathedral. Unfortunately, perhaps, the success of this production led to the redecoration of moving picture houses all over the country into Chinese pagodas, Egyptian temples, Spanish courtyards, and what-not until the public yawned



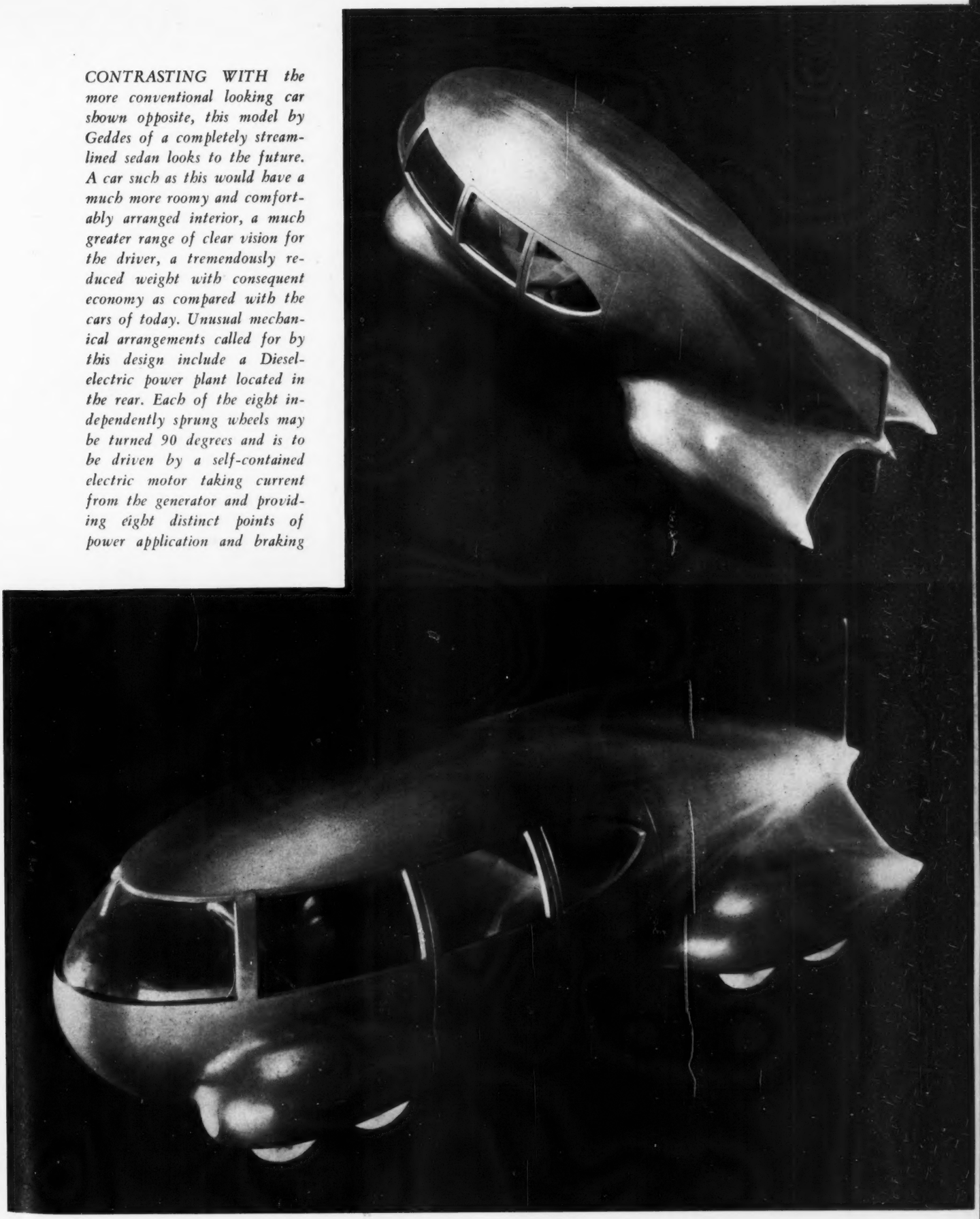
ONE OF GEDDES' earliest ventures into industrial design was this motor car, done for the Graham-Paige Company in 1928 to meet their demand for a car that would be in style five years from that time. Upon its acceptance and from it were to be designed four other models, each of them to step back 20 per cent. toward the 1928 car so that the changed style could be achieved gradually with the die cost distributed over five years. The question was: "Would this really be in style in 1933?" The Graham-

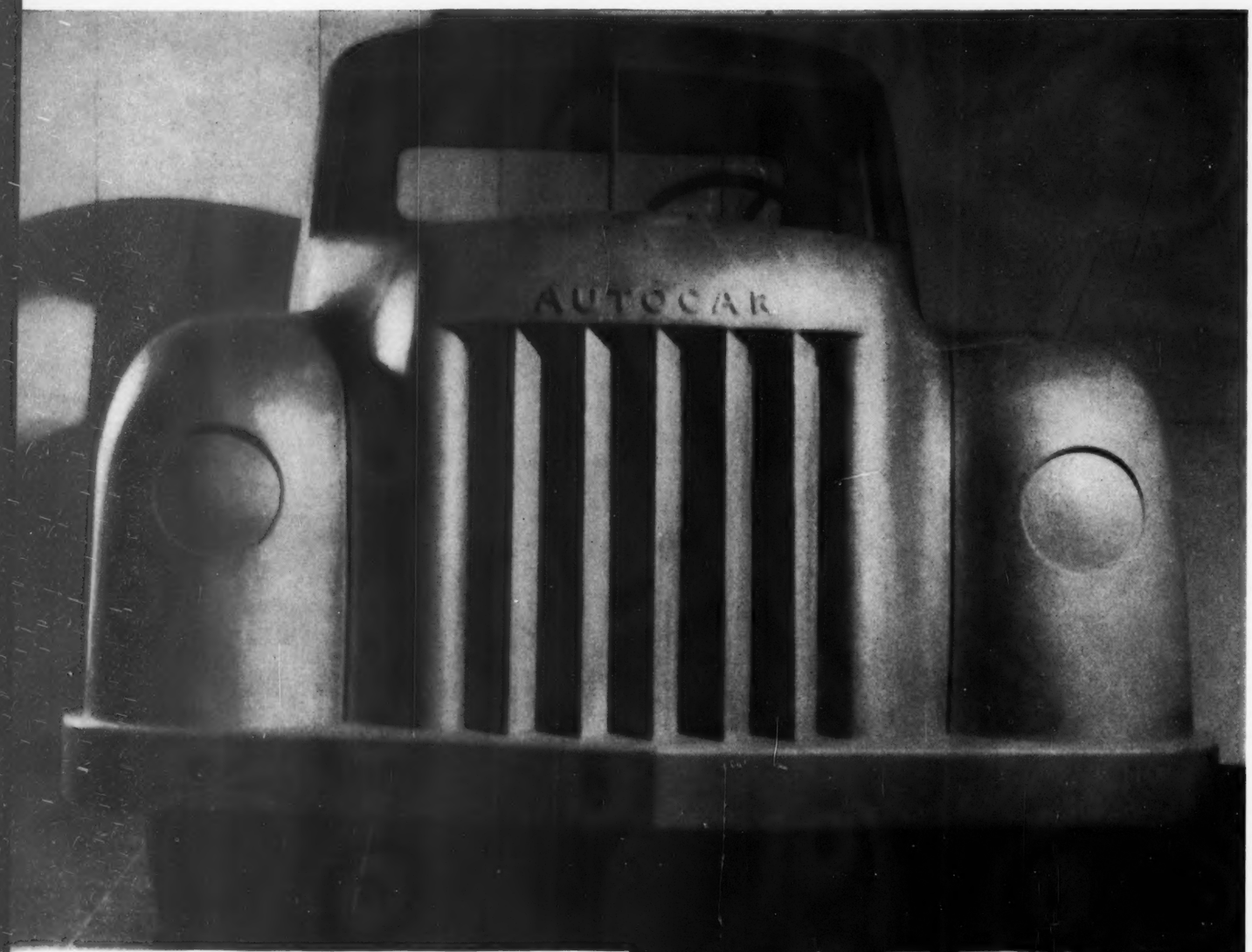


Paige people decided not. It strikes us that except for its extreme simplicity and lack of fairing of the front fenders, this model so much resembles present cars that it would attract little attention if driven on the streets today. This car possesses many innovations which are now considered commonplace; a rounded front, a top which folded down into the body, a built-in fuel tank and trunk compartment, a freedom from unnecessary mouldings, and provision for front lamps to be set low and between mudguards

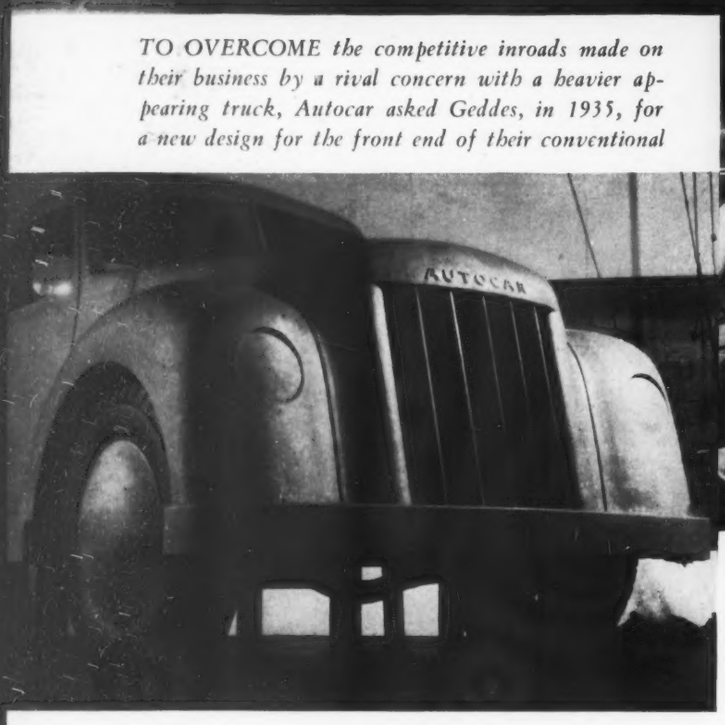


CONTRASTING WITH the more conventional looking car shown opposite, this model by Geddes of a completely streamlined sedan looks to the future. A car such as this would have a much more roomy and comfortably arranged interior, a much greater range of clear vision for the driver, a tremendously reduced weight with consequent economy as compared with the cars of today. Unusual mechanical arrangements called for by this design include a Diesel-electric power plant located in the rear. Each of the eight independently sprung wheels may be turned 90 degrees and is to be driven by a self-contained electric motor taking current from the generator and providing eight distinct points of power application and braking

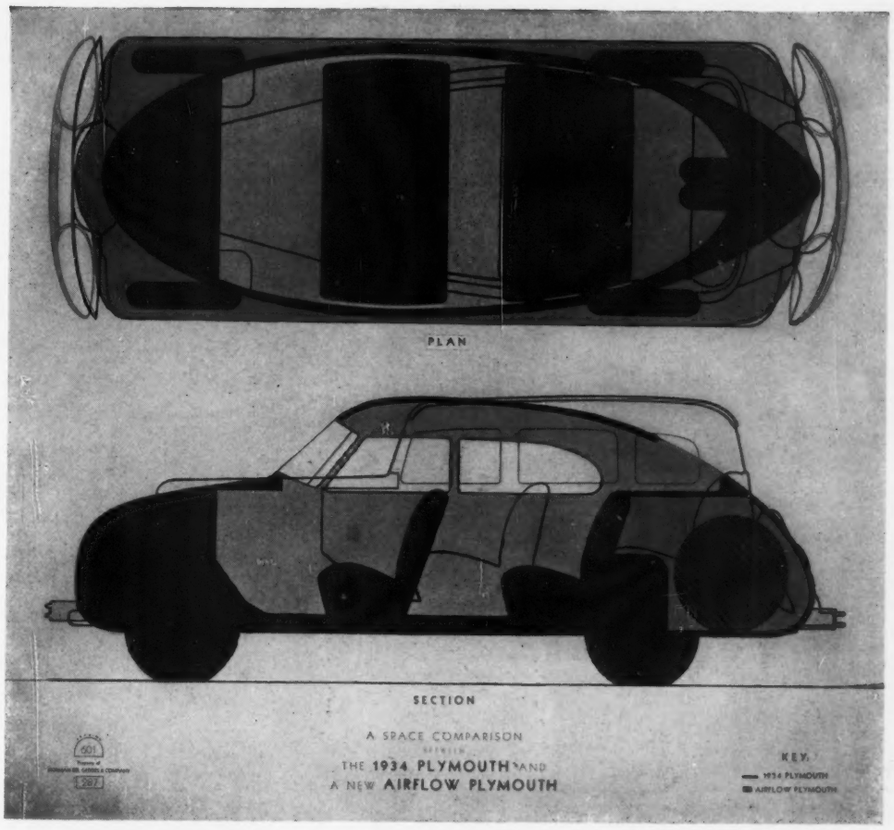




TO OVERCOME the competitive inroads made on their business by a rival concern with a heavier appearing truck, Autocar asked Geddes, in 1935, for a new design for the front end of their conventional

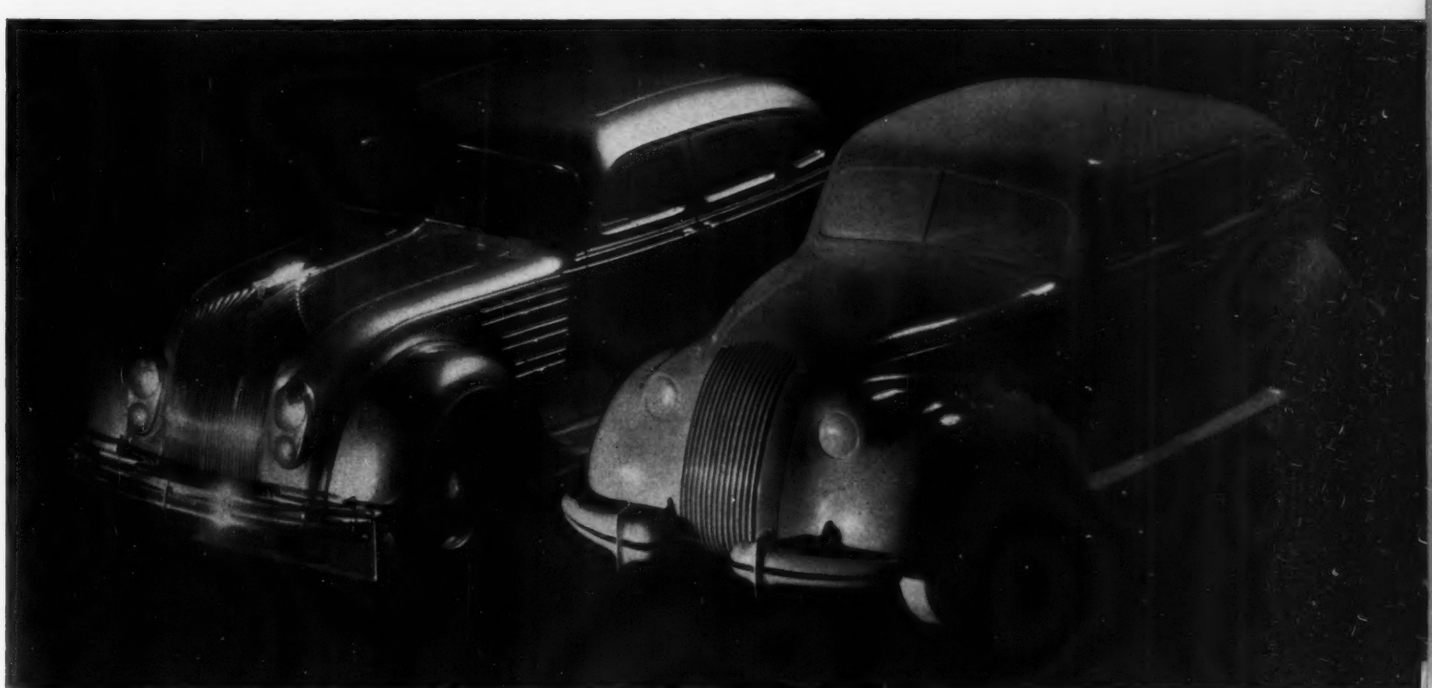


model—one that would express the extreme of power and strength. Working from rough sketch to scale model to full size model, Geddes produced this serenely powerful looking prow to dominate the road —and, we could easily believe, the truck market

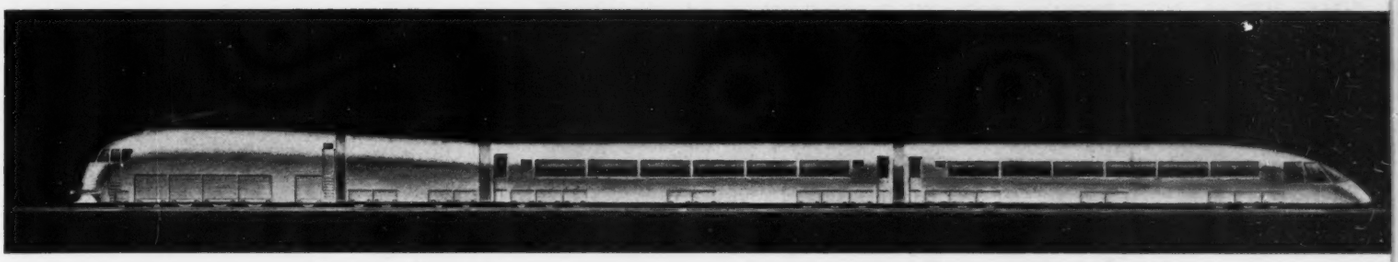


TO SHOW graphically a comparison between his suggested design for an improved Plymouth and the regular 1934 model, Geddes prepared this diagram. The advantages of the new design in respect to improved vision, greater headroom, more capacious seats, and improved riding comfort are at once evident. For a front-engined car this design approaches the maximum of perfection possible (1934)

DIES FOR THE FIRST Airflow had already been completed when Geddes was brought into the Chrysler design picture. Public reaction had by then indicated a resistance to the novel frontal design. His job was to redesign the car, maintaining or improving its streamline characteristics, at the same time making it more attractive. Had the Geddes design been used originally, we have a feeling that it would have been received with enthusiasm. Note the arrangement whereby the slipstream, passing the ports in the fender, draws the heated air out from the engine space

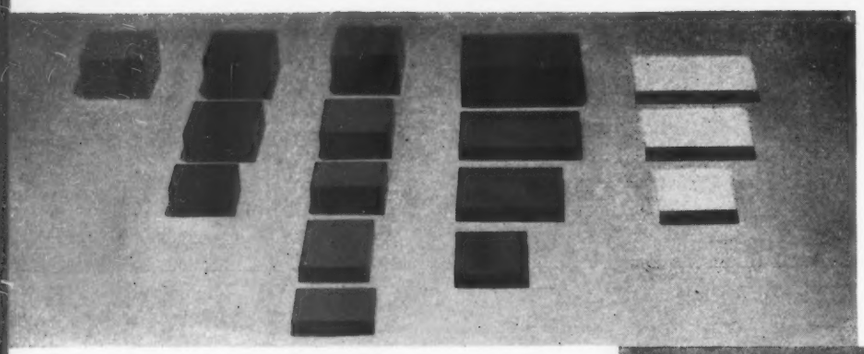


THIS is the Geddes substitute for a "rendering," a semi-flat model constructed in one-inch relief of actual materials to be used. This full-sized model shows the client the exact interior appearance of his motor car in actual materials, color, proportion. The dull aluminum of the plain moldings around the windows is repeated in the door fixtures at the joint of upholstery and floor. Gray whipcord striped in blue formed the upholstery



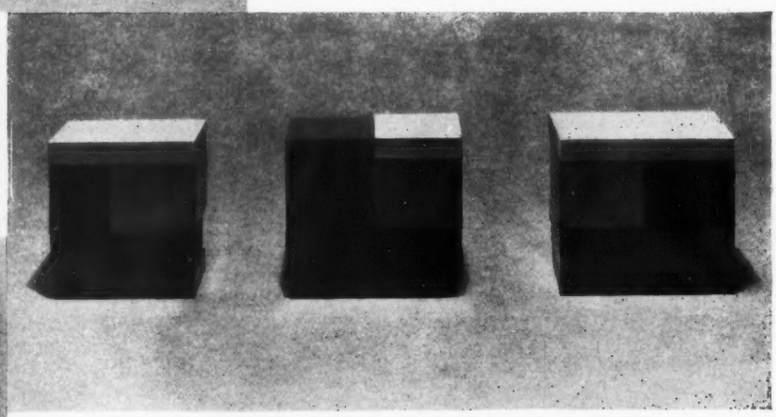
MOST OF GEDDES' forward looking designs for improved, streamlined, land, water, and air vehicles were covered with patents wherever possible. This streamlined steam train, however, was not so protected since his patent attorneys considered the railroads too conservative to adopt any of the ideas. Surprisingly enough, it was the railroads that were the first to move in this direction and Geddes' train, designed in 1931, became the forerunner of the Union Pacific, Burlington, and other streamline trains designed and produced several years later and now in operation. This train is an excellent example of Geddes' insistence on a search for the form best suited to the solution of a problem, with secondary regard for tradition

THE BEDS DESIGNED by Geddes in 1929 for the Simmons Company were so radically simple that they were not included in the line until about four years later. They have been good sellers ever since. He introduced here the policy of not trying to make steel furniture look like wooden furniture either by its form or through surface treatment, taking advantage rather of the peculiar qualities of steel as material



THE BLOCKS at the left represent the sixteen standardized units designed by Geddes in 1932 to replace the several hundred units then being used by Standard Gas Equipment Corporation for its stoves

AT THE RIGHT are assemblies of the standard blocks into three of the four stove models found to supply every essential feature of the hundred models previously carried in the line



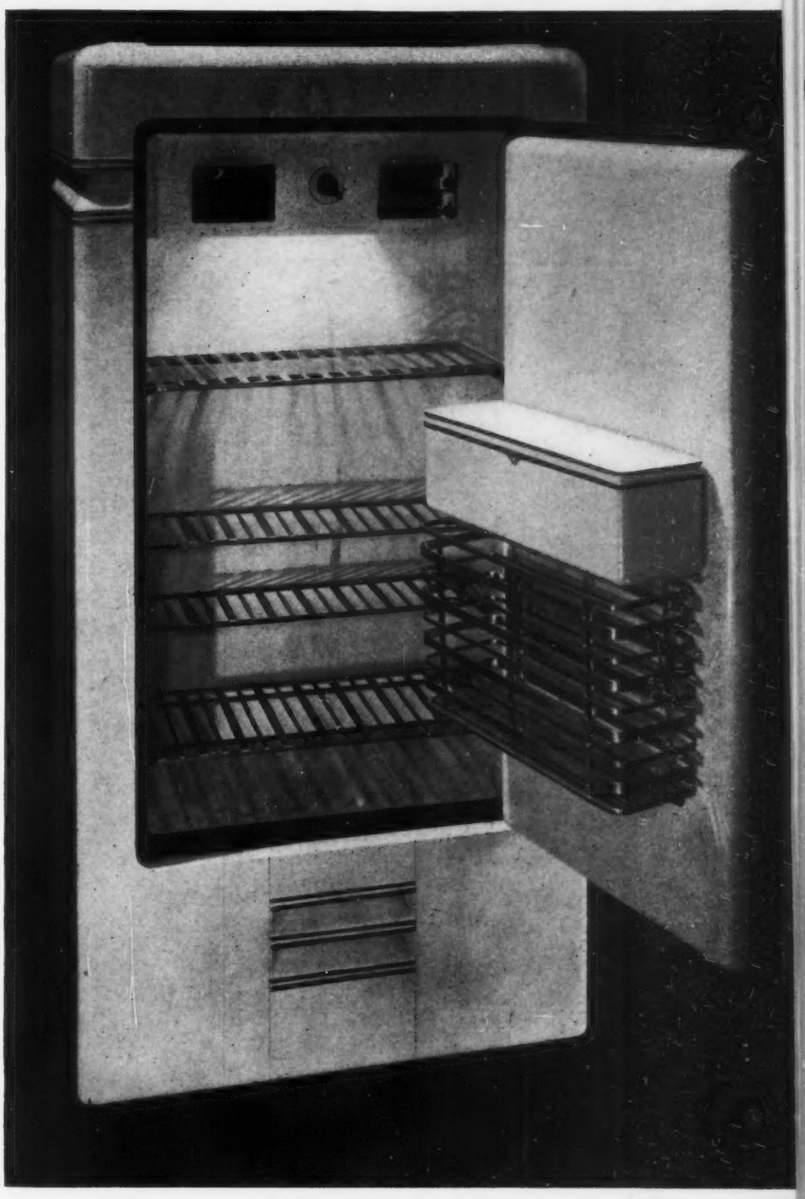
A VIEW LOOKING DOWN on one of the completed stoves reveals the efficient looking simplicity to which we are now accustomed but which was rare before 1930

ONE OF THE MOST successful of Geddes' designs for mass produced articles, this stove is a plain out-and-out cooking machine with no frills, no gadgets, no decoration to dress it up. Its attractive appearance, its efficient operation and ease to clean, and its economy of manufacture by mass production methods combine to make it almost an ideal example of what a good industrial designer can and does do to improve living standards. This was the first all white stove on the market

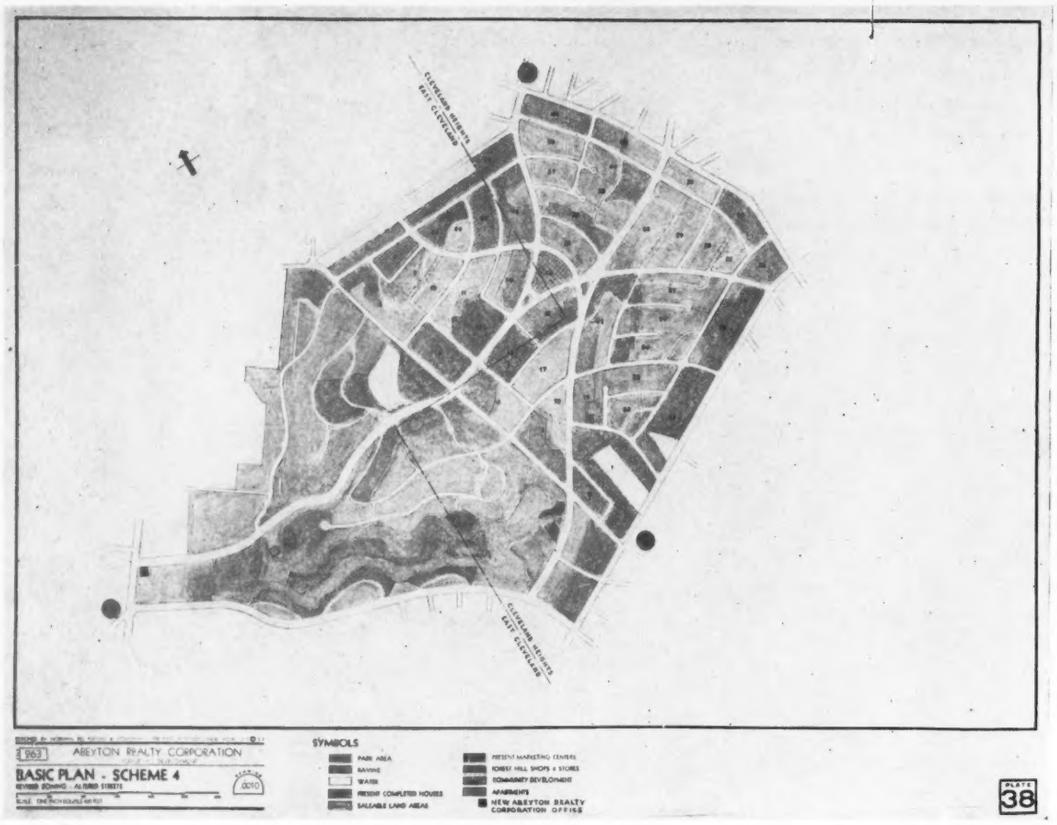
worked out. Then comes a period of research as extensive as the problem requires, during which all facts which have a bearing on the problem are assembled and put in condition for orderly analysis. This information varies with different types of work but usually embraces such subjects as the methods and equipment used by the client in his factory, cost details for the various processes, all data on the materials from which the product is and might be made, a complete survey and comparison between this information and that of competing products and of things which might be used in conjunction with the proposed product. If, for instance, the thing being studied were a gas range, the design characteristics of other kitchen equipment, such as refrigerators, would be pertinent.

One of the most important groups of data to be secured is that having to do with the reactions of dealers and consumers to similar articles already available to them. This is obtained by direct interview with individuals representing a good cross section of the probable market. All of this information is collected from the point of view of *design for use* as well as for *appearance.*

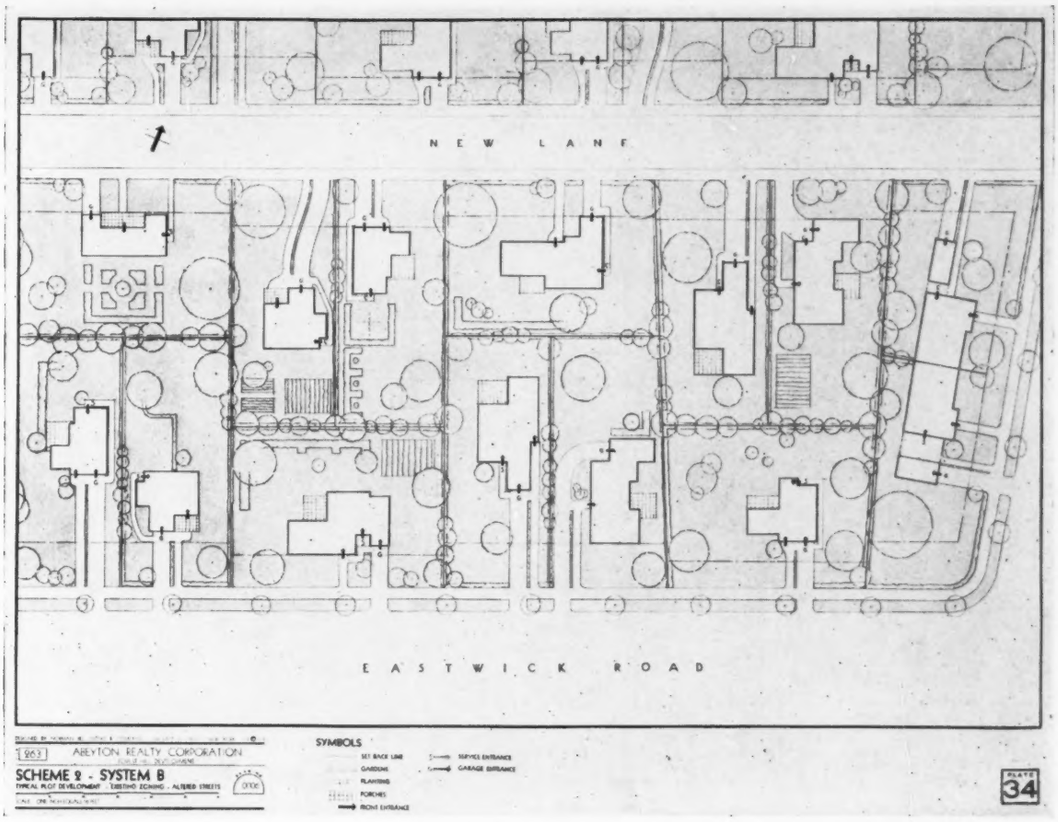
When all the facts have been brought together they are discussed in conference with the design staff, every member of which must digest the material and get the whole picture clearly in mind before preliminary sketches are started. Here, says Geddes, is the crux of the solution. These talks of his at this point start the group off all from his own viewpoint as a base to which any member has access for further information, and inspiration, at any time. Geddes starts nearly all problems in the same way: by first of all determining what the ultimate result should be, then working backwards from that point to the present. Conflicting ideas on the part of employes are encouraged although often overruled. In any case thinking must precede drawing in Geddes' establishment. There



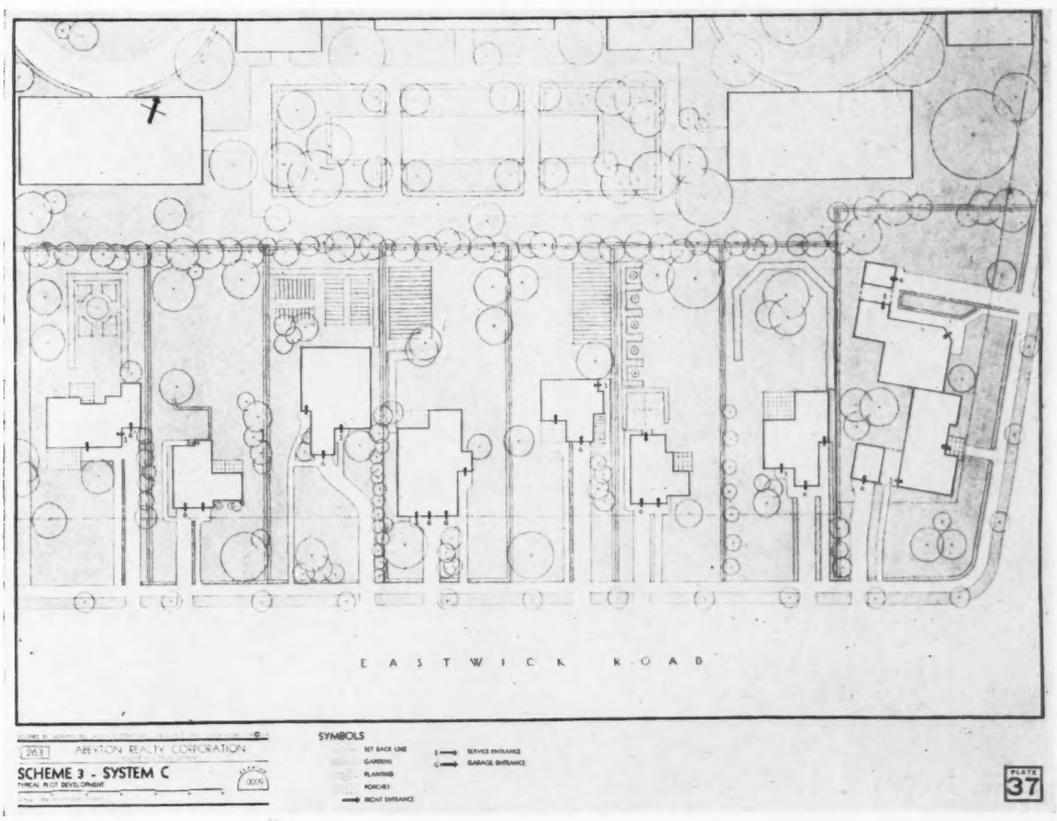
A COMPLETE full-sized model of Geddes' design for an improved Electrolux air-cooled gas refrigerator was built to show the client, Servel, Incorporated, exactly how the finished product would look. It is the result of a concentrated and extensive study of the whole refrigerator problem and everything about it represents a striving toward perfection for use. The beauty resulting from simplicity, good proportions, and fine finish was, of course, consciously attained —but not at the expense of any functional requirement nor by the application of any extraneous ornamentation. The door, carried on concealed hinges, closes flush with the exterior cabinet surface. So viewed, only the necessary louvres at top and bottom and the circular gray and white name plate, which releases the door catch when pushed by hand or elbow, relieve the plainness (yet somehow not severity) of this modern kitchen accessory, designed in 1934

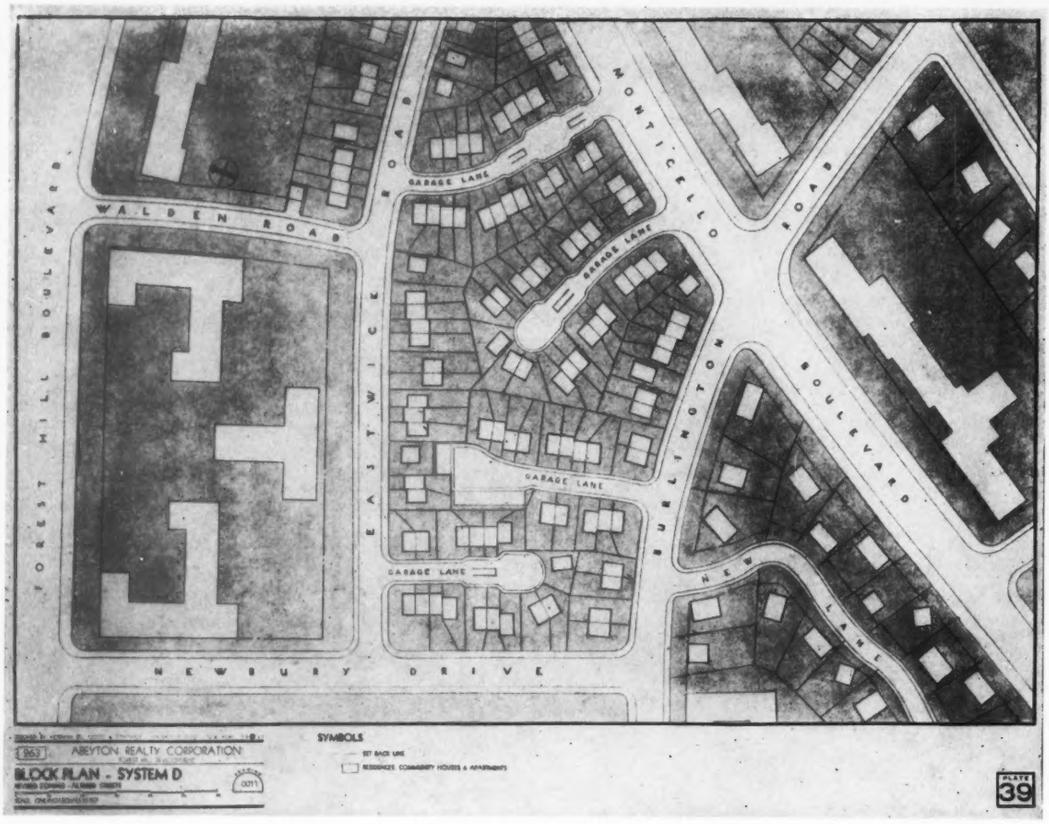


THE EIGHT CHARTS shown on this and the following pages are from an extensive report made in 1933 by Norman Bel Geddes and Company for the Abeyton Realty Corporation, a Rockefeller interest. 800 acres of undeveloped Cleveland city property were analyzed in their full complex relation to the rest of the community. From this examination, recommendations were made to establish a workable, financially sound plan for marketing the land

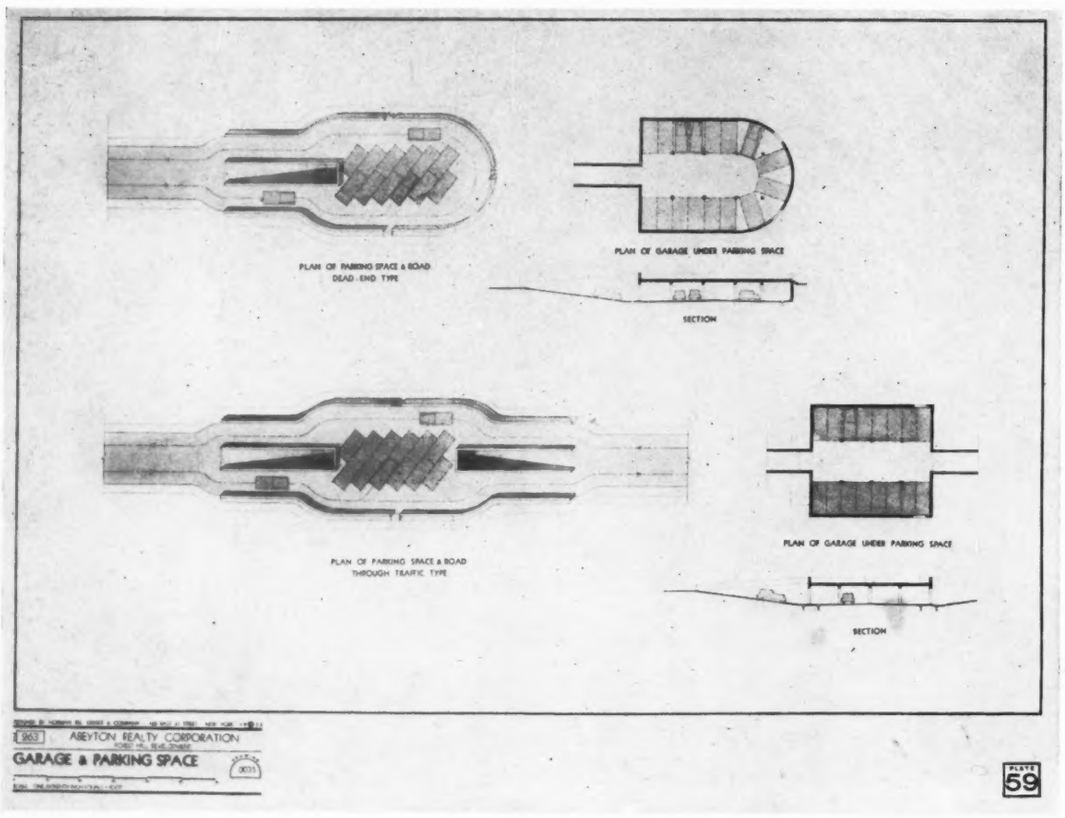


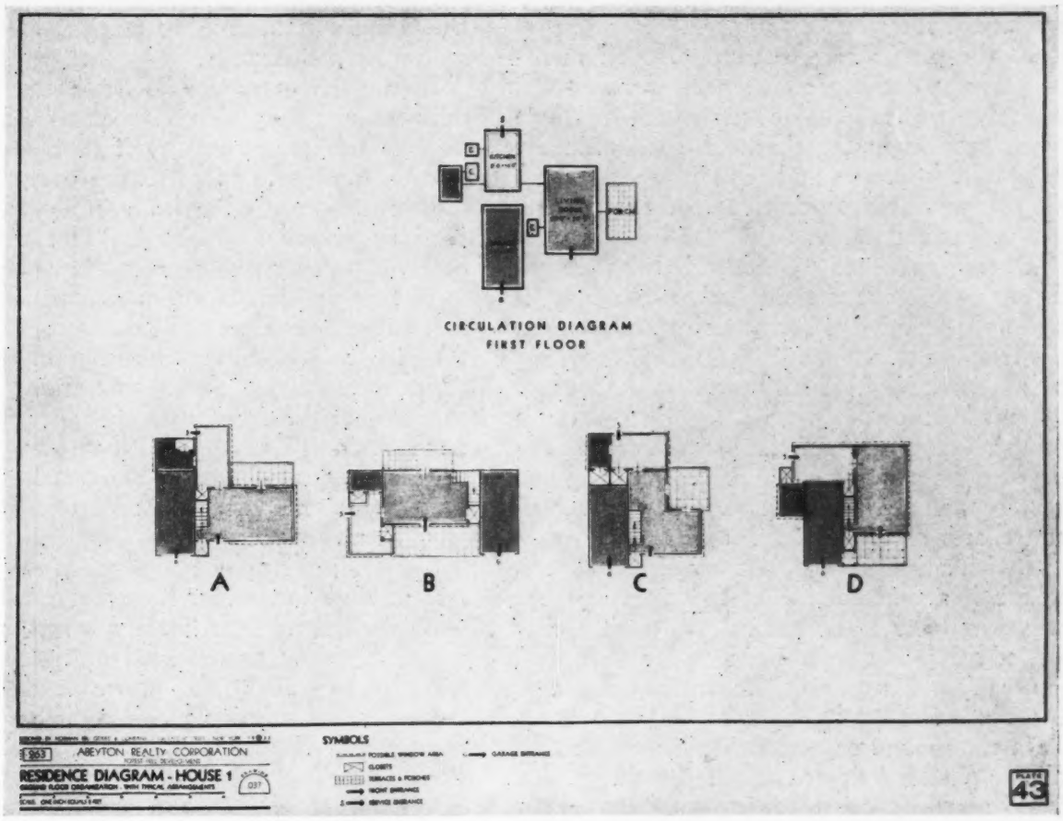
EVERY CHART represents a part of several systems of planning for the entire development, each of which was worked out individually for study and comparison. The tract was studied with streets unchanged and with new streets added; with existing zoning which permitted only single dwellings and with zoning revised to permit multiple dwellings in combination with single. Several arrangements of lot lines were drawn up and analyzed



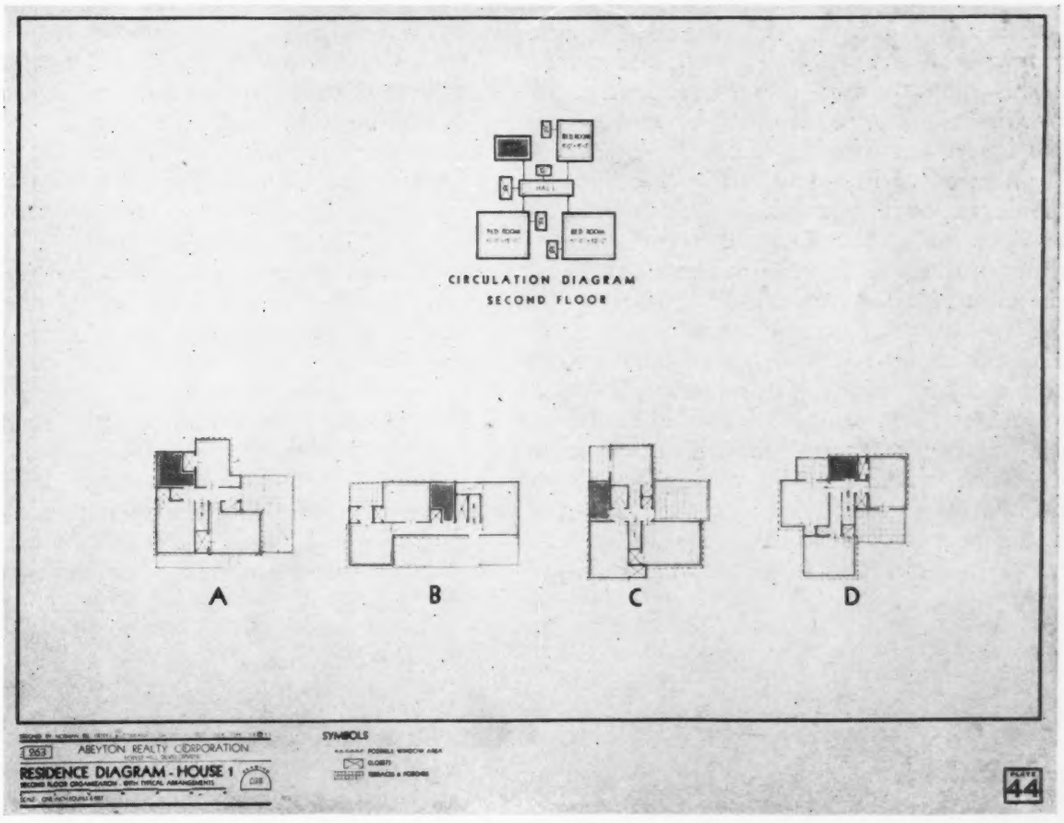


IT WAS THE constant aim of the report to find not only the answer to a specific real estate problem but to include with that answer an important contribution to modern housing. On this page, for example, is indicated an arrangement for subterranean group garages, located in dead end or through lanes, designed to serve the adjoining houses and to afford parking space above ground systematically arranged and screened by appropriate planting





THE CHARTS AND the study proceeded from the general to the particular, going into detail in relation to the planning, construction, and costs of individual houses, group houses, and apartments. On this page are circulation diagrams and various possible arrangements of first and second floor units for basementless six-room houses with garage, designed with an approximate cubage of 15,000 cubic feet to be built at 34c a cu. ft. for about $5,000



is no fumbling around on paper in a vague search for ideas or "inspiration."

In the preliminary sketch stage all members of the design staff prepare idea sketches for any solutions that occur to them. These are then brought together and Geddes himself criticizes, improves and selects possibly three or four of the most suitable for further development and study.

During this study period, clay models are freely used, since the emphasis throughout is upon the search for form. Color and texture are left out of the picture until the form has been determined. Finally, working drawings are made, together with a scale or full size model. The findings of the research are usually detailed in a complete report, each page of which, as illustrated by the Socony and Abeyton charts reproduced herewith, concerns itself with a single point. A copy of this report, which is assembled during the course of the work in loose leaf binders and during that period serves as a reference work for the staff, is usually presented to the client at the end of the job.

In the matter of presenting his ideas to his clients, Geddes' experience in the theatre has stood him in good stead. He has an excellent understanding of practical psychology and knows how to focus the attention of the business executives who form his clientele upon the points he wishes to drive home. His admirably direct reports are neatly typed and illustrated by charts, drawings and photographs with the lettering set up and printed in his shop to keep them confidential. His working models are set up to be viewed from the best point of view and are dramatically illuminated to bring out their best qualities. He does not attempt to hide their defects, but he does realize that ideas have to be sold to the manufacturer as well as to anyone else, and the means he uses are wholly legitimate.

Sometimes he devises unusual forms of display for his ideas, somewhat analogous to the architect's rendering. The montage, shown on page 24, is an example of this, as is also the subject we used for this month's cover on the magazine, which is an interestingly composed assemblage of the actual materials to be used on his proposed Socony service stations. Each actual material is there shown in an area proportionate to its actual quantity relation to the whole on the finished station, in its correct color and texture.

In the ten years Geddes has been working on industrial design, he has tackled and solved a large number and variety of problems. They are too numerous to catalogue here, but the most important of them are illustrated in these pages and in his book, "Horizons." To keep his staff busy at times when commissions were few, he carried on with them research and development work in the design of ideal forms for such things as automobiles, ocean liners, super airplanes, railway trains, and so forth, all of them looking to the future. While some of these designs seemed visionary when they first appeared, they were so soundly conceived that the world has begun to catch up with them.

Geddes' philosophy of design may be simply stated. He believes that for every given set of conditions there is an ideal form which does not need to be ornamented or decorated to make it beautiful. The preamble to finding the successful solution is to master first all the facts which may properly condition that solution. This done, the designer must pursue his search for the right form with every bit of ability and honesty he possesses. The acceptance of traditional things which have been outdated he feels is evidence of mental laziness. There is no laziness in him and by his work he has inexorably forced many others to drop their lazy habits. Geddes has the ability to think things out fundamentally and express them in the same terms. Several years ago he said the following to a girl who had asked his advice on learning to draw. "It is learning to see as clearly with your eyes closed as with them open plus the skill to record what you see. Never mind about talent but you must have concentration, and patience. Look at that glass of water. Now close your eyes. Do you see it as clearly with your eyes closed as open? No, try again, and this time concentrate on the relation and proportion of part to part, line to line. Add patience to concentration and even without any previous practice with a pencil you will surprise yourself." The postscript to this is that the young lady who at that time had "good ideas but couldn't draw" is today a successful designer in her own name.

THE ARCHITECTURAL SCHOOL

HOW CAN IT PREPARE MEN FOR ACTUAL PRACTICE

BY ELLIS F. LAWRENCE

EDITOR'S NOTE:—*The following discussion by Dean Ellis F. Lawrence of the School of Architecture and Allied Arts at the University of Oregon is based largely upon convictions gained from thirteen years' experience with W. R. B. Willcox in promulgating and establishing the system, ideals, and objectives maintained in that school, and nine previous years of futile struggling to patch and mend the evils of the old methods then accepted as standard. Professor Lawrence's remarks are somewhat rambling and extended, but they bear on one of the most troublesome problems confronting the architectural profession today—that of providing for its continuance in the future in a changing world in which merely following the traditions of the past would not entitle it to survival. Though it is long, we commend it for the reading of every architect who takes seriously his responsibilities as a professional man.*

AN ideal School of Architecture should be a happy home in which the student is helped to educate himself. There are three vital implications in this statement, the essence of which comes from Saarinen's remarks at the San Antonio A.I.A. Convention. The environment in which the student works should be a *happy* one; the staff should be *helpers;* and the student should *educate himself.*

How simple, yet profoundly basic! The problem of architectural education would no doubt be solved if every school could be conducted in accordance with these three fundamentals.

However, it is not easy to attain this ideal. The School is seldom master of its environment or the mechanism which makes it what it is and there is no place where one can study the technique of teaching architecture except in the doing of it. Practicing architects, many of whom are used as teachers, "tell" their draftsmen, which may be helpful to the efficiency of the office, but cannot be considered the best way to *help* the student *educate himself.* Moreover, there are few schools which escape the influence of educational usages around them, which seem too often to measure success by the amount of information crammed into the heads of the students, and in which teachers are dictating what—when—and how the students think.

Let us consider first the most important influences entering into the making of a happy school environment. These appear to be—the locality; the physical plant; the inter-relationships between staff members and students, and pedagogical methods.

Location—City or Country?

The tempo of the large city is fast, but it offers the best laboratory of construction and usually better collections of art treasure. The city is impersonal. Its horizons are often limited. It is apt to drive its citizens into themselves, or into exclusive groups, to find any semblance of peace.

On the other hand, the life of the small city or country town moves more serenely. Though it sometimes is as provincial as New York, it is more often nation-minded. Its citizens share more in communal life. Sometimes its horizons are wide, spreading out to the sea, the mountains, streams and meadows. If it is alive and building, or if it is near enough to the large city where contact with actual building operations is available, it is not a bad place for a school of architecture.

Good schools are found in the country and in the city, indicating that other considerations are more important than the location of the school.

It is the writer's notion, after being trained in a large city school, and having organized and conducted a school in a small town, as well as having visited and studied most of the architectural schools in the country, that the happiest environment, and the most human and clean, is more often found in the smaller cities near the country. Undergraduate life especially responds to such an environment, while graduates with more maturity and a more fully developed sense of values will no doubt find in the large city that which they need in the way of diversified building prac-

tice, masterpieces and art collections. This does not mean, however, that no graduate work should be given in any qualified school.

Physical Plant

There are good schools in ugly buildings, with little or no beauty around them, but, obviously, if the environment is to be the happiest and is to demonstrate a practice of what the school preaches, the plant should have charm and beauty. Even simple and inexpensive quarters may be attractive, as witness—John Galen Howard's "Shack" at the U. of California, or the plants at Southern California and Oregon, built around intimate courtyards where one can meditate or converse according to his mood. The atelier or workshop, rather than the classroom, should dominate the scheme. Part of the plant, at least, should be a laboratory in which the painters, architects, sculptors, and craftsmen may experiment, and part should be set aside for some permanent collections and embellishments.

Inter-relationships of Personnel

Outweighing in importance the locality, the physical plant, or pedagogical methods, are the intricate in-relations between administrative Deans, staff and students, and the public. Here, often, is the stumbling block in the way of attaining Saarinen's ideal of a "happy home." An unsympathetic overlord; an autocratic Dean lacking in understanding; a staff warring among themselves or intolerantly pedantic, or oppressed by superimposed authority; a student body torn by jealousy or indignant at favoritism, injustice, or unfairness—one of these can wreck the enterprise.

The ideal would be to cement all the individuals involved into a genuine cooperative undertaking in which all are free, and to protect that freedom by a sincere and deep appreciation of the rights of others. In such a group it would be disastrous to one's own prestige to be selfish, intolerant or arbitrary.

So vital is this phase of the problem that anything which can in any way disturb the serenity of these human relations should be studiously eliminated, and only those things conducive to bringing out the best in human nature should be allowed to remain. Even the minutiæ of operating the school could well be examined and questioned from this viewpoint.

In all frankness, this is seldom done and in the system are still retained many diabolic remnants from an archaic education where barriers are built up between teacher and student; where subject matter is neatly pigeon-holed in place of being correlated; where students are regimented and driven; where superimposed discipline, instead of self discipline, rules; where inferiority complexes are made worse, or superiority complexes made more unbearable; and where teachers are slaves to some master.

In such, where can one find a spirit of contemplation; how can a right sense of values be expected; and how can a happy environment result?

The late Dr. Prince Campbell, President of the University of Oregon, once said of the kind of democracy for which we should strive "It has the minimum of restraints and the maximum sense of obligation." Here is the answer for education, as well as democracy.

The writer would like both this thought of Dr. Campbell and Saarinen's statement inscribed over the doorway to every Architectural School. If lived up to, a new architectural education would soon sweep the country, largely because under their beneficence right human relations would result, and the soil be properly prepared and made fertile for the full germination of the seeds planted in it.

Saarinen's implication that the teacher should be a *helper* is wise, not only to make for a more happy environment, but because the student should *educate himself*. Certainly it is more friendly to help and counsel than to teach, in the accepted meaning of the term. Some things in architecture can and should be taught because they are factual things, but most of the study of architecture falls into the realm of æsthetics and ethics, which cannot be taught as factual things are, and which must come from within the student if he discovers their rightful place in his personality and character, and in his art.

Before passing on to Methods and Pedagogy, it might be well to consider what the "perfection" means, which is often seen in exhibits of student work. Obviously the instructor has been doing the work the student should do, unless the student is already a master. When winning is the objective, is it not likely to drive the teacher of design into the policies of the football coach, if he is to hold his job?

One student recently wrote—"Competition to me always spells compromise." There is no place for compromise in "self education." It is very foolish and futile to bluff oneself. The architectural student, in the right environment, does not need any false objectives or artificial stimulants. They are bad medicine for him and befog his mind. He should be in competition only with himself, struggling to develop his own abilities 100%. Added to all this is the stimulating experience of creating beauty and orderliness. What more does a wise

and understanding teacher need to help a student who has already felt their lure, else he would be taking Business Administration, Coaching, or something else?

Because we are still on the subject of Interrelationships and the happy environment, it seems necessary to condemn not only competition, but the antiquated adjuncts of judgments (who is competent to judge?), grades, honors and honorary societies, and even the barbaric methods we still use in examinations. If we would clean the desk of these impedimenta, it might be very pleasant to act as a helper to the earnest students (which architectural students usually are), and feel the stimulation of understanding co-workers in the common purpose of making a "happy home in which students are helped to educate themselves." Speaking of judgments, how much better it is for the student to learn to judge his own work wisely, than to witness the usual debacle that follows even the decisions of the wisest juries.

Methods—Pedagogy

To discuss Froebel or Dewey in such an article as this would be out of place, but pedagogical methodology plays an important part in building a school environment, as well as in helping students to educate themselves, so here are a few remarks on the subject.

An apprentice, if his master is the right man, may go farther than the school man, and some profit most from this or that system. Given a great teacher and a student, methods and physical environment become relatively of minor importance. Yet it does seem as if the educators could agree on some fundamentals upon which a method might safely be built into sound pedagogy, without danger of stifling experiment or growth, or developing killing standardization. Here are a few which appear to me basic enough to start a creed.

(A) Each student is an individual, endowed with certain talents and influenced by certain experiences, training and environment.

If this is accepted, out would go standardization, uniformity of method, and mass training; everything, in fact, that cripples or retards development of the individual student, according to his particular needs. It means special medicine for each special case. Anything else would be a surrender of the ideal behind the processes of the school, i. e., the very maximum of real service to the student.

(B) The best education is free in method if it is to be dynamic and not a dead thing. Accept this and any formal system of approved schools is dangerous; authority superimposed on staff or students is detrimental; false objectives, such as winning grades, medals, or honors, cannot be tolerated; and examinations must be individualized to suit their purpose of ascertaining what the student knows.

(C) Factual things can be taught by instructors, but æsthetics and ethics cannot. They must come from within. They must be discovered by the student. This means, if the teacher seriously respects the mind and soul of the student, that he moulds his methods accordingly. He must be able to win the confidence and trust of the student in order to guide him to educate himself.

(D) The project method is sound. This fixes the importance of the program and gives a rare opportunity for "learning through doing," and arouses interest in the need of knowing and understanding theory courses in which can follow the experience of "doing."

(E) Countenance no divided responsibility anywhere in the system. Accept this and it becomes necessary early to clarify the student's responsibility to himself, his fellow students, and the staff, as it does the duties of staff and Dean. A goodly part of education comes along the way from these inter-relationships. Playing a constructive part in the group life is part of the game. "The minimum of restraint and the maximum sense of obligation" cannot maintain without fixed responsibility.

(F) The urge for creative expression is one of the most powerful motivating forces in architectural education. Why, then, contaminate this choicest of objectives by false motives —to win to please teachers, or to do it the way the judges would want it done. Education has done much violence to this rare attribute by keeping it in a certain bondage. The freer it is, the less interference done to its functioning, the more likely it is to be the pure thing. No greater responsibility lies on the teacher's shoulders than to nurse tenderly the creative abilities of each student into the right channels. Otherwise the results are imitative and abortive. The new architectural education will stimulate original expression more sensitized to modern civilization. The old brought closer plagiarism from the average student.

(G) Architectural Design is the backbone of architectural education. All subjects play into this and, through it, interest is stimulated in technical and cultural subjects. It draws to it the allied arts. Being given by the project or case method, the program is all important. The making of the program, then, cannot be delegated. The student and his teacher should make it. The research involved is good for both of them. The student learns by it and

the teacher, because the individual student is the "case" for him, becomes more conscious of the needs and interest of that student.

What's in a Name?

New York University has recently adopted the Oregon name—"School of Architecture and Allied Arts." Others choose "School of Fine Arts" or "School of Fine and Applied Arts"; but most use the simple and direct name of "School of Architecture." Why more have not used "School of Design," I wonder.

Whatever the name, it should signify a definite type or conception. The writer is suspicious of the name "School of Architecture" because he sees the ideal school as comprehensive in its scope as is architecture itself, which draws into its collaborative undertaking the engineers, landscapers and city planners, interior decorators, painters, sculptors, and craftsmen. If all these considered their work a part of the building process, and the public accepted architecture as such a collaboration, only then the name would be excellent.

The lesson of collaboration can best be learned in such a school and anything which appears to isolate the architect from his fellow workers in the design and execution of the building is hardly the most desirable choice.

The writer also rejects "School of Fine Arts," for it, like "School of Architecture," seems to imply a cult of superiority—and anyway, why Fine Arts? It, too, suggests invidious distinction by omitting applied art from the picture. Applied art is perhaps the most important phase in raising our artistic standards.

It is good pedagogy to build into the environment of the school all those elements which must be correlated in the process of building. If each element is on a parity with every other element, all are strengthened by such association. Architecture may be the Mother Art, and the architect the co-ordinator, but let us be frank and admit that a better architecture results when all the designers and craftsmen can play together in the undertaking, without undue interference. Leadership is inevitable and it will go, in the long run, where it belongs. The architect, if he is worthy of the name, need have no fears of being supplanted. If he is not worthy, someone else should take his place.

Architects seem sometimes to be very jealous of their prerogatives—a Renaissance habit. The Gothic Guild might teach us many helpful things in this modern game of building.

The writer likes the name "School of Architecture and Allied Arts" for Oregon. Some day there will be a great "School of Design," where architecture is one part of a great workshop in which all the processes and materials of design are at hand and where all concerned are striving for one common major objective, to design and build beautifully.

If the "School of Architecture" maintains, as it probably will, let us preach that architecture is a collaborative art, and that good architecture results in proportion to the degree of collaboration between the landscaper, the decorator, the painter, the sculptor, the craftsman, the engineer, and the architect, as well as the mechanics and the constructors; and then let our Profession practice the preachment in the field.

Organization

A sound premise to follow for administrators and for groups alike would be to avoid divided responsibility. In other words, hold the administrator or group strictly accountable for performance by fixing what their responsibility shall be and give them all the power needed to exercise it without interference.

Another sound premise is that the more freedom an individual or group has in solving problems, the more growth, the more breadth of vision they have, for they "learn by doing."

Inconsistent with this is a department of architecture *under* Engineering, or Fine Arts, or a College Faculty, or anything else, if by being "under" means being interfered with. The technique of teaching architecture is, or should be, peculiar to itself, for it can because of its nature be freed from many of the handicaps involved in teaching other subjects. Its style should not be cramped by being obliged to conform to rules superimposed by faculties not intrusted with the education of architects.

Let us leave this subject by stating that the maximum autonomy is to be desired, consistent with the obligation of every unit in an Institution to its ideals and practices. When these ideals and practices prohibit the kind of training the profession should expect, the profession will have its say somehow.

Adequate budgets are absolutely necessary. Two hundred dollars per student is too little, and there are many schools operating on less.

Staff

The key man is the Dean. We have all kinds: engineers, musicians, scholars, pedagogues, practicing architects, has-been practitioners; rich and poor. Taken as a whole, they are a pretty earnest, fine lot, imbued with the teacher's zeal, and alive to what their job implies. Free them from the worries of budgets, interference from faculties outside of their departments, and give them the support and

understanding of the profession and registration boards, and they really might be delightfully human fellows.

But the ideal Dean has yet to be captured, for he must be a paragon of untold virtues, with endless understanding, native tact, eloquent and witty in address, a writer of parts, brilliant in debate, and something of a salesman. He should have a good knowledge of everything architectural and otherwise. Add to all these the stuff educators are made of, and you have a picture of what the Dean should be. Should there be such, the writer suspects he would be captured as the President of the International Council of Peace before he had gone far in the educating of architects.

Some day it would be interesting to have the pen of Hubert Ripley or Louis LaBeaume tell the architectural world what garden Deans are plucked from, and why. It would be betraying professional secrets for the writer to say more, though he must confess to certain amusement at the antics of some of those seeking for these key men, noting all the side issues which enter in to confuse the real ones, which are, proven abilities as an administrator and in handling human relations, breadth of vision, character, and understanding.

The writer always valued the counsel of Dean Edgell of Harvard in the Association of Collegiate Schools of Architecture. Not being an architect, Mr. Edgell seemed to approach the problems from an impersonal point of view, free from the prejudices which the practicing architect often picks up about his profession. This is not to be construed as an argument that the Dean should not be an architect, but it holds the suggestion, at least, that knowledge of architecture—yes, and achievement in its practice—are both less important than other qualifications.

Staff members should be reincarnations of Mr. Socrates, with that rare power that was his of making men do their own thinking, and making them, through analysis, logic, and synthesis, arrive at their own solutions, backed by sound convictions.

They are rare people, these sons of Socrates, especially those who have understanding and the milk of human kindness in their veins, which they needs must have if they are to be classed as great teachers.

Having no training school for architectural teachers (thanks be!) these men come as specialists in their fields, and their teaching ability is usually untried at first. They "learn by doing," which indicates experience is a vital factor in evaluating a teacher's possibilities.

Salaries being generally too low for successful men to be able to give up their profession for teaching, there are many young men in the ranks especially when openings in the practice of architecture are rare. Perhaps the greatest crime in architectural education is that these unripened teachers, without the broadening experience of life, are assigned to teach the lower grades, and the lower grades deserve and need the most skilled talent as their guides.

Youth has a definite contribution in the teaching game. The young man brings with him enthusiasm, daring, idealism, and skill, but architecture must early be tied tight to the people it serves. The teacher must be social-minded if architectural education is to be humanized. Experience and age ripen and mature and broaden some men, and they, most of all, are needed in architectural education.

Generally speaking, there is no greater need in the system than endowments to assure all architectural teachers a sabbatical leave every few years. They sorely need travel and contacts outside the classroom.

Naturally, there is much suspicion of the educational methods of the architectural school among other faculties. "How can they work their students so?" (as if barred doors would stop them!). "It can't be good teaching when such a high percentage pass with high grades." "Of course an architect can't teach mathematics and economics, or sociology." "Architecture is just another vocational subject." "Arts and skills are not real education." Under present set-ups, service courses are given the architects by other departments. The writer's conviction is that the ideal would be to have as voting members of the architectural faculty all teachers giving courses to architectural students. The confrères of the writer will no doubt think him a candidate for a psychopathic hospital, but consider for a moment what a staff might and should be.

First of all, it is a cooperative undertaking, this helping a student to educate himself. Every staff member can contribute something from his contact with the student to what should be in essence a diagnosis by the group. Now, the architectural student is lost in large classes in mathematics, physics, sociology, economics, history, etc. These teachers, if they know the student as an individual, do not now sit in at the clinics of the architectural group.

Let each department offering these service courses delegate, with the approval of the Dean of Architecture, a staff member to act on the Architectural faculty. All would benefit and these men from other faculties would become liaison officers, strengthening the faith of the Institution in what the Architectural

School is doing, and in how it is being done.

The writer wants the work done by seminar and discussion—not in the classroom, but over the drawing board, around the court, by the fireside, or in the workshop, and from individual research. He wants it to tie into the Project when, and only when, it is pertinent to give it its deepest meaning.

For example, economics might be introduced as a part of a city planning project, or sociology as a part of a housing project. The doing first and theory afterward, because interest has been aroused and stimulated, is sound pedagogy. The factual part is thus vitalized.

As an architectural educator, the writer admits all these non-professionals might throw the machine out of kilter at first, but he believes it possible to get sympathetic souls from other faculties to understand the significance of this method of training.

The Students

It is generally thought that there are too many studying architecture. The Bosworth-Jones Survey shows that this is regional. Some privately endowed institutions limit enrollment. State Institutions, supported by tax money, find it difficult to do this, though some have faced the issue of inadequate funds by limiting enrollment in their professional schools.

All can, if desirable, stiffen requirements for entrance and during attendance; but the story told by a venerable Dean of an old eastern School is pertinent: "I told A——— (mentioning one of the most eminent architects of New York) early in his architectural studies, that by no stretch of the imagination could he ever hope to be an architect—and look at him now. One never can tell!"

The writer agrees, "One never can tell," for he has seen many a student favored with great talent go on the rocks, and many starting with little apparent ability succeed greatly.

Shall the Student Pay? Scholarships

By all means, as far as he is able. Some—deserving, needy and talented—should have scholarship aid, but a thing free is apt not to be appreciated as much as a thing earned and paid for. This life of ours in the U. S. A. is given too much to getting something for nothing, according to Moody, the bankers' adviser and authority on business conditions.

The writer favors the repayment of scholarships by the recipient, for his own good and that of coming generations, though he prefers this responsibility to be moral, not legal.

Paternalism weakens character and saps morale. There is such a thing as doing too much for students, as there is for citizens.

A University President once said to the writer: "We have all the money necessary to get the best teachers and students," a dangerous implication if he meant to go into the market, as in football, to outbid rival schools.

Fortunately, students on the whole are discriminating and go to certain schools to secure certain advantages. More and more they seek the great teacher.

Talent may spring up among the fisher folk of Astoria, Oregon, or Alaska, as well as among those of Cape Cod. For this reason, scholarship endowments should be equalized over all sections of the country.

The amount students should pay depends largely on local conditions. In State Institutions, the state subsidizes each student from state funds. It is the writer's belief that all should receive the same amount in such cases, and pay the difference between this subsidy and the cost of giving them good training in their respective lines. This is based on justice and would if put into effect solve many a strained budget in Institutions spread too thin over all kinds of courses. It would also tend against educating too many professionals.

Graduate Work

When Atkinson of London made his survey of Architectural Schools of this country a few years ago, he made the remark that all were doing the same thing in the same way, with the result that the American architect seemed much the same in California as in Massachusetts. Liberalized education has of late tended to greater freedom in expression and local qualities are showing more and more.

Some advocate one great Graduate School. Will we never learn the dangers of centralization? Not many years ago, the late Gabriel Ferrand, of Washington University, told a group of educators what centralization had done in France and of their plans to decentralize, to re-vitalize architecture. Graduate work is n e e d e d in every strong school, wherever it may be. Undergraduate work is strengthened by the pacemakers in the Graduate School, and graduate work needs and responds to a live undergraduate group.

Healthy rivalry among the schools, able by environment and endowments to offer strong graduate work, will take care of the problem without a loss of freedom and initiative. It is a reflection on the school-men to assume they will proselyte or persuade their own students to remain with them for graduate work, when they should perhaps have a change of environment and new teachers. One general policy the writer can subscribe to—all things being

equal, the western student does well to go east; and—he has the presumption to humbly suggest—it might do the eastern student a lot of good to take his graduate work in the west.

The graduate years can well be years of specialization. There is certainly room for the development of graduate work in city planning, housing, interior decoration, landscape, construction, and TEACHING; and no doubt in other fields, such as acoustics, heating, etc.

Degrees

The writer would like to live long enough to see a constitutional amendment to bar all "sich" undemocratic devices. Enough time has been spent in the past in trying to standardize degrees, to solve the intricacies of the New Deal. Better forget this problem and leave it—since we have to—to the Institutions themselves. They will do as they please, in their own very peculiar manner.

With the disappearance of the Approved School there is little or no need for standardized degrees. Let the graduate stand on his own. What he knows—that is where our interest lies; not in what labels he can legally attach to his name.

When Preparation for Practice is solved, the one thing comparable to the academic degree of old may be "Architect," after one's name; but in this the School plays but a part. Registration Boards and the years of experience prior to registration enter in before one can earn the title of "Architect."

What Courses Have the Student of Allied Arts and the Architect in Common?

The writer does not like separation of courses into pigeon-holed compartments. He would like to use "Architecture" as the one catalogued course. However the curricula is set up, there are obviously many subjects all Arts allied with Architecture need, and which therefore can be taken in common. Among these are Graphics, Delineation, Design, and History. The taking of these fundamental or basic subjects by all majors at the same time brings them together on common ground and educates them toward their common purpose.

Design—Construction—History

Design has been called the back-bone of the architectural curriculum. Design distinguishes the architect from others who build. However, it fails in the school if paper architecture results. Models and perspectives help, but more important is the way the student thinks about his job. The more he thinks in terms of three dimensions, the better his product. The more he thinks in terms of functions and relations in his plan and how he is to build his structure, the nearer the process becomes reality, and approaches field work. Architecture is a collaborative art; therefore the architectural student should, as far as possible, work with fellow workers in allied arts. No school is complete without such facilities, as I see it.

There are few projects that do not call for something from each of these co-workers: the painter, the sculptor, the landscaper, the engineer, the interior decorator, and the craftsman. All may well serve as critics. Collaborative problems are excellent. Merely to have the work going on in the midst of activities in these allied fields is of great value. An ideal condition is where the results of the problem can actually be executed.

From this point of view, it is obvious that each student should have his own project. It must be his own task, to think through himself. Periodical sketch problems and the solo projects recently introduced at Minnesota by Roy Jones serve a definite purpose, however. Being done without discussion with the teacher, they serve as tests of progress. Judgments by any but the designers themselves are inconsistent with the methods for which this article pleads. Personal opinions, freely given by students and staff alike, are advantageous. The differences stimulate the man to make his own evaluations and this is education.

In passing, the writer wishes to register a protest against the *esquisse en loge*. It has outlived its usefulness and certainly is not a logical thing for such an approach as is here described. The ideal is to seek for the right solution—the very best the student can do—so why defeat such by tying the student for several weeks to a wrong solution?

The way criticism is given marks the success or failure of the teacher of design. To tell the student what to do is poison in many ways. Better far let the students make their mistakes, than to do their thinking for them. Mistakes are natural at their stage of development. Perfection in student work should be viewed with suspicion. Again it is a case for the offspring of Mr. Socrates. The writer has found three critics on the same project better than one alone. They torment the student, to be sure, but when once he sees the job is his, he must translate the varied reactions he gets into his own convictions for what they are to him, alone. This brings a painful effort always to exhaust his own resources and he is often dissatisfied with anything but the best performance he can make. He becomes a very exacting task master of his work and this also is real education for through it he comes nearer to

100% efficiency of talents with which he is endowed. Architecture is the product of society. The better it serves mankind the greater it is. Design in the school, then, must be humanized by sympathetic interpreters. It is the writer's hope that some day design will be taught as the stimulating initiation to Sociology, Economics, History, Education, Religion, Business, and Industry, as well as the Allied Arts and the technical subjects of construction, mechanics, etc. The design project certainly would be vitalized by so doing, and become a very much more real and vital thing.

To those who believe the student should be fed little by little, this spells chaos and confusion, no doubt, but the writer is seeking to educate for thinking, feeling, and understanding, rather than for the acquirement of factual knowledge alone. Believing in "learning by doing," and in "application before theory," the writer feels no hesitancy in advocating such an approach. He has tried it and is amazed at the facility of the students to assimilate when lured to find out for themselves.

All of which leads to the pertinent question —Are the Schools educating architects, or draftsmen? The writer's conception is that the School should make it possible for the student to educate himself as a free, thinking, questioning soul: that architecture is a splendid medium through which to accomplish this.

Construction

It goes without saying that construction must not be separated from design. Architecture depends on the skill and artistry in putting materials together. A museum of materials should be an adjunct of every school and the student should be expected to make his selection of materials and methods of assembling them for every project. This applies well to problems in interior decoration also.

Recently the writer saw a thesis done in a Canadian school. It included an excellent set of working drawings, and the design was creditable. Graduates usually jump into practice in Canada and England, it was explained. However, the writer feels the usual set-up in the States, requiring at least three years of practical experience in an office after graduation, before registration, is to be preferred. Even a five-year course is not long enough to give the average student the technical skill, scientific theoretical knowledge, and broad culture required for the practice of architecture. To add to the already over-crowded curricula in the schools such courses as are needed to substitute for office experience, is very questionable and can only be done at the expense of culture, technique, and artistry.

History

The youth of today is looking ahead as never before, for he is confronted with tragically pressing problems. He is pretty well fed up with the mess past civilizations have made of life. Perhaps this is the real reason why students are less interested in architectural history than they were ten years or so ago. History should be given largely to develop taste and cultural background. The writer believes it is more needed than ever, considering modern tendencies in architecture.

Before specialization, all majors in architecture and allied arts could well take a course which might be called "Civilization and Art Epochs," in which all the arts are stressed, as are their relations to their times. Following this might come the technical courses in History of Architecture, Painting, Decoration, etc. Identification of the masterpieces of old has its place, of course, but too much memory sketching work is apparently an awful bore to the students. The writer finds they respond best to the human part of the story. They are interested in biography, the story of the artist, as they are eager (when the subject is presented rightly) to profit by the experience of races. Whatever the attitude of the student is, he absorbs from Architectural History certain appreciations and applications. Cultural background is gained and taste stimulated.

Service Work to Other Departments

The Committee of Education, A. I. A., has done remarkable work in getting courses in Art Appreciation into schools and colleges. Architectural Departments, especially if the Allied Arts are associated with them, are splendid vehicles for giving such courses. These are becoming very popular on college campuses and are showing results in a more wide-spread and sensitive appreciation of art.

New Schools—Upper and Lower Divisions

There are too many architectural schools in some districts. Institutional rivalry, together with a growing interest in architecture, are largely responsible. New schools should be discouraged unless an adequate budget is available and the field not already filled.

There is a growing practice of dividing College education into Upper and Lower Divisions, the latter to build a broad foundation, and the former to give more specialized work. This is dangerous for architectural students if by it the student postpones his creative experiences in his chosen field and is deprived of being in the atmosphere of an architectural

group. This tendency does suggest that there might well be two classes of schools, the Lower Division school confining itself to giving essential basic courses. The determining factor might be the budget. A number of these Lower Division Schools would serve the purpose of tapping the students' interest early, and so be able to aid them in choosing their objectives wisely. But the School of Design or Architecture and Allied Arts should not be without Lower Division, Upper Division, and Graduate work.

Where Does the B.A.I.D. Fit into the Picture?

There have been few efforts made by architects which have been more remarkable for unselfish and inspired service than the B.A.I.D. The writer wants to see it continue to grow in usefulness. He would like to see Chapters in every large city, closely allied with Education Committees of A.I.A. Chapters. He suggests the following activities for the B.A.I.D.: Ateliers for non-school draftsmen; clearing house for the new Mentor or Counsellor system; handling certain of the national competitive fellowships; criticizing the problems (the student in the Atelier wants to know what his peers think of his work, and why, more than he does to win a medal); strengthening collaboration between the arts of architecture, painting, sculpture, and design.

The writer agrees with a former Director of the B.A.I.D. who declared that the B.A.I.D. should not, itself, be in the field of education. That responsibility is the school's and divided responsibility is always dangerous. Programs cannot be intelligently written in New York for a boy in Oregon, for the boy's needs are not known by the writer. For the non-school draftsman, the case is different. Now he is often without any opportunity for training outside the office. Alliances between the B.A.I.D. Ateliers and the Schools of Architecture for Extension work would be wise.

The same amount of time now spent by B.A.I.D. Juries in impossible judgments would be a contribution to every participant if spent in analyzing and criticizing each design. Judgments do no one any good, and usually do harm.

The B.A.I.D. has plenty of valuable work to do without entering into the field of the Schools, and the writer finds it difficult to understand how certain of the Schools can delegate program making to those not very close to the student, or how judgments of student work in the schools can much longer be countenanced as sound pedagogy, especially if those judgments are made by those not aware of what the special training objective is, back of the instruction producing the work.

The Joint Committee on Preparation for Practice

Nothing more constructive than the organization of this committee has happened to the profession of architecture for many years. At last the profession, through its Committee on Education, the Registration Boards, and the Schools, is cooperating to the common end that those entering the profession be given every opportunity to be properly prepared. It should be obvious how vitally each fits into the scheme. Where each has for so many years been moving along according to its own notions, differences of opinion naturally exist, but these will now be ironed out around the Round Table, and adjusted in more kindliness and mutual understanding of objectives and duties. This deserves a special article, so pregnant it is with possibilities.

Both the Schools and the Boards serve the profession, which should be interested enough to participate in helping the youth—the future architects. The Schools give theory and culture, and train thought processes. The Profession must see to it that adequate practical experience may be secured and the Registration Boards must examine candidates so that the public interest be served.

It takes team play to do the job and this means regard for the other fellow's opinion.

Shall There be Approved Schools?

The writer says "No," for approval by any group means stultification, loss of freedom, and a tendency to standardization. Better raise the standards of architectural education by more friendly and wiser means, by establishing intimate contacts between these three groups. Do this through travelling representatives from the Joint Committee, not from any one group; also through Chapter Education Committees and through the Mentors or Counsellors.

Several years ago, the association Schools repudiated their approval of its member schools by abolishing the "Standard Minima."

The Institute does not need "Approved Schools," for men joining the Institute should stand on their own feet wherever they come from. The Registration Boards in certain States call for Schools approved, to be sure, but they have in most cases already eliminated such classifications when School graduates are candidates and should, according to the writer's notion, remove "approval of schools"

from their documents and rules in determining the probation period for those who have not attended the favored school. After all, their function is to protect the public. Why discriminate? It endangers the legal background of registration and smacks of injustice. Why not, regardless of educational advantages, confine registration to men who have reached a certain age (say twenty-four), and who have had at least four years of practical experience, and who pass the examination? There have been many great architects who have never attended an architectural school.

Where is the Profession Going?

Sometimes it has seemed impossible to the School men to answer this question, but if it cannot be answered, how can the Schools be expected to know how to educate architects for modern practice?

Once, the Institute more sensitively reflected the objectives and ideals of the profession. Its Conventions are no longer forums for discussion. Perhaps sub-territorial conventions are needed to offset the ever present curse of centralization. However that may be, it would be constructive to take account of stock and settle where we are going. Will it be the business way, with solicitation, advertising, organization, getting the job at any price? Or will it be the professional way, where service rules? Will we go into the building and promotion game, or will we all become salaried men for operators or government? Should we be engineers, or artists? Shall we become collaborators or dictators?

The profession should speak in no uncertain terms and demand the practicing of its ideals.

One thing is certain—whatever happens, the architectural designer will find some niche in which to practice his art. The writer, feeling the professional ideal must be preserved, will do in his own school all he can to train for ethical, professional practice, even if in his innermost heart he knows by their eloquent testimony the disappointments his students face when they "buck" the field.

But the School men simply cannot make salesmen and artists—business men and professionals—at the same time. The Profession must help them in this problem, by declaration and example.

Thomas Jefferson once wrote—"I agree with you that there is a natural aristocracy among men. The grounds of this are virtue and talents. The natural aristocracy, I consider as the most precious gift of nature, for the instruction, the trusts and the government of society."

Registration and the Schools

Many question the wisdom of surrendering Registration to Political appointees, believing the Institute should have controlled it as does the R.I.B.A. in England. Others question the principle back of registration, believing aesthetics cannot be licensed without harm.

The Committee on Preparation for Practice will no doubt safeguard registration where it can. The Schools should be of value in the system, seeking to train for what will be the dictates of the Profession. They should be of service in examinations because of their experience in such techniques. If examinations are in two or more stages, as some advocate, the first stage could well be handled by the Schools through the various State Boards. If the methods and standards of these Boards meet the approval of the Schools, the passing of the first stage (theory and design) might well be the basis for the School degree.

As the Profession fixes its destiny, and the Committee on Preparation for Practice fixes the standards for registration, the Schools will have a more defined duty than they now have.

Contemplation

How we all need time for it in this whirlpool of life! And somehow, in the schools, we must have it. Here's an introduction to a research report, showing how one student feels:

"As I close the last book which I have been reading about great problems of government, of life, of souls, I think of Kahlil Gibran's words—'No man can reveal to you aught but that which lies half asleep in the dawning of your knowledge'—which gave me a strange peace, an inner assurance that beneath the jumbled pages of others' thoughts, I have a realm within me which only reflection may bring to life. There are so many words that one's mind grows weary of the printed souls of men and wishes to seek in solitude what broken bits of ideas lie dormant, and yet alive, in one's own mind. Many ideas 'lie half asleep,' and reading only piles more shreds of other men's minds on them. So, I have paused in my reading to see whether or not the dreams of others have fed or starved those which are within me."

In closing this article, let it be remembered that over the door to our School, we are to engrave something like this:

> "We want this School to be a happy home where the student is encouraged to educate himself."

Here is "the minimum of restraint and the maximum sense of obligation."

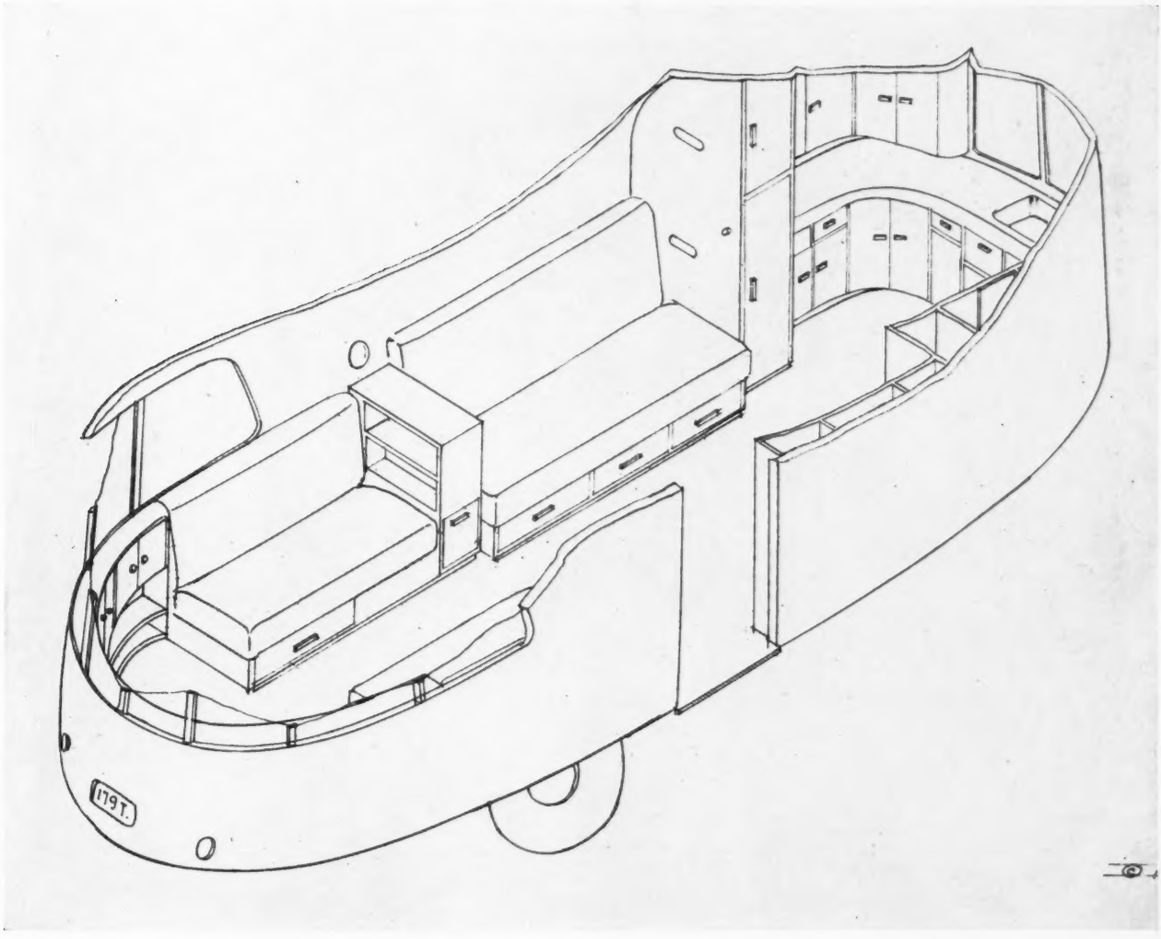
TRAILER DESIGN BY AN ARCHITECT

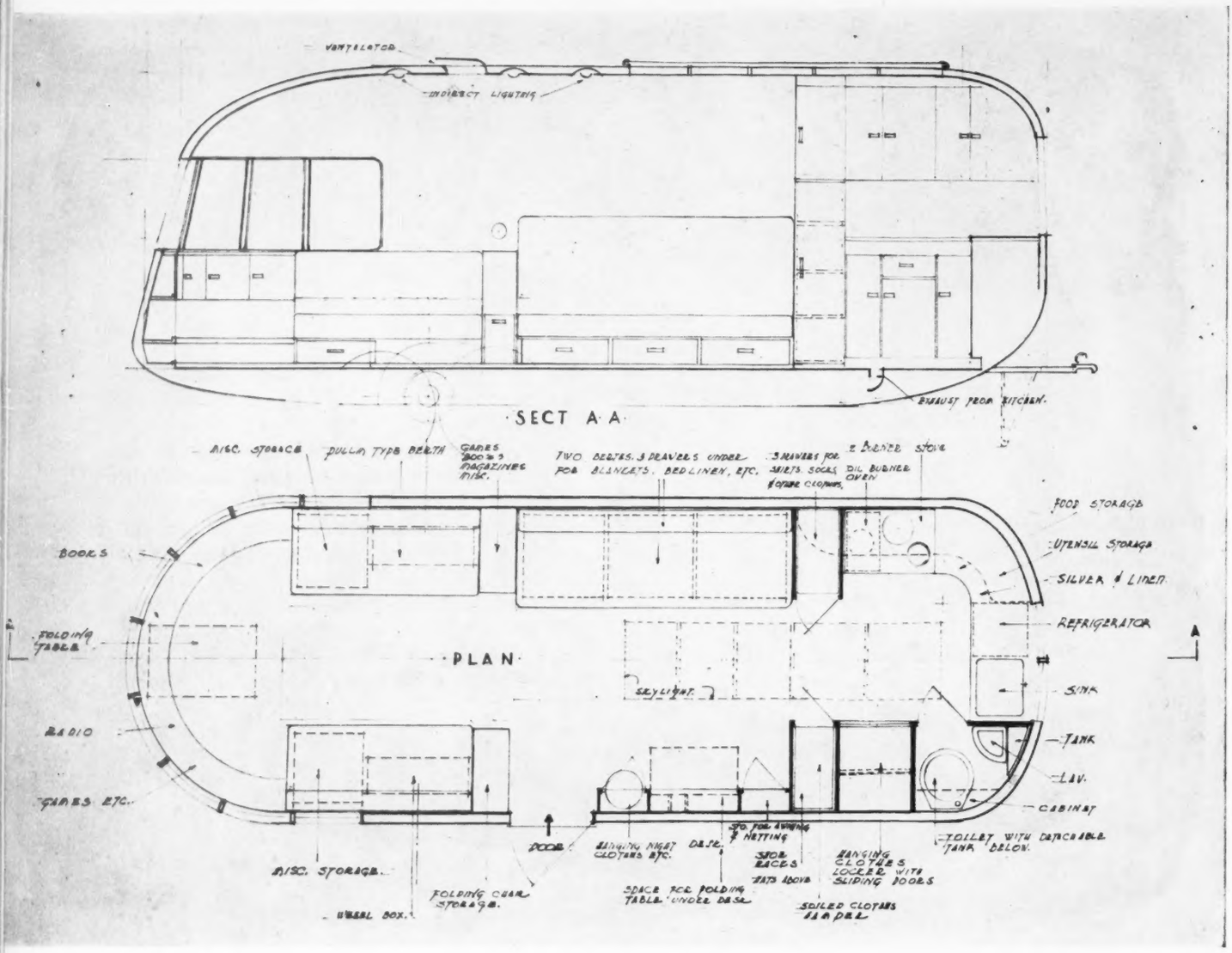
A SMALL HOUSE SPECIALIST PLANS FOR MOBILITY

BY ALBERT KINGSLEY

FITZGIBBON and Crisp, of Trenton, New Jersey, who have for years been fine body builders, recently decided to go in for the building of trailers to meet the growing demand for that type of movable abode. They looked over the field and decided that many of the trailers produced to date were poorly built, designed in bad taste, and not endowed with the elements of appearance and construction such as found in the present-day automobile. It appeared that the quantity-produced trailer was very likely to be modeled after a home-made affair built by the producer originally for his own use. There appeared to be a good prospective market for a well designed and soundly constructed trailer that could be sold for a price within reach of the average family.

At about this time, the president of the company, George R. White, very wisely decided to engage an architect to design and plan the arrangement of the proposed trailer —one who had proven his skill at planning small, compact, convenient houses and who was thoroughly conversant with what the small house client wanted. He turned to Royal Barry Wills of Boston as being such a man.





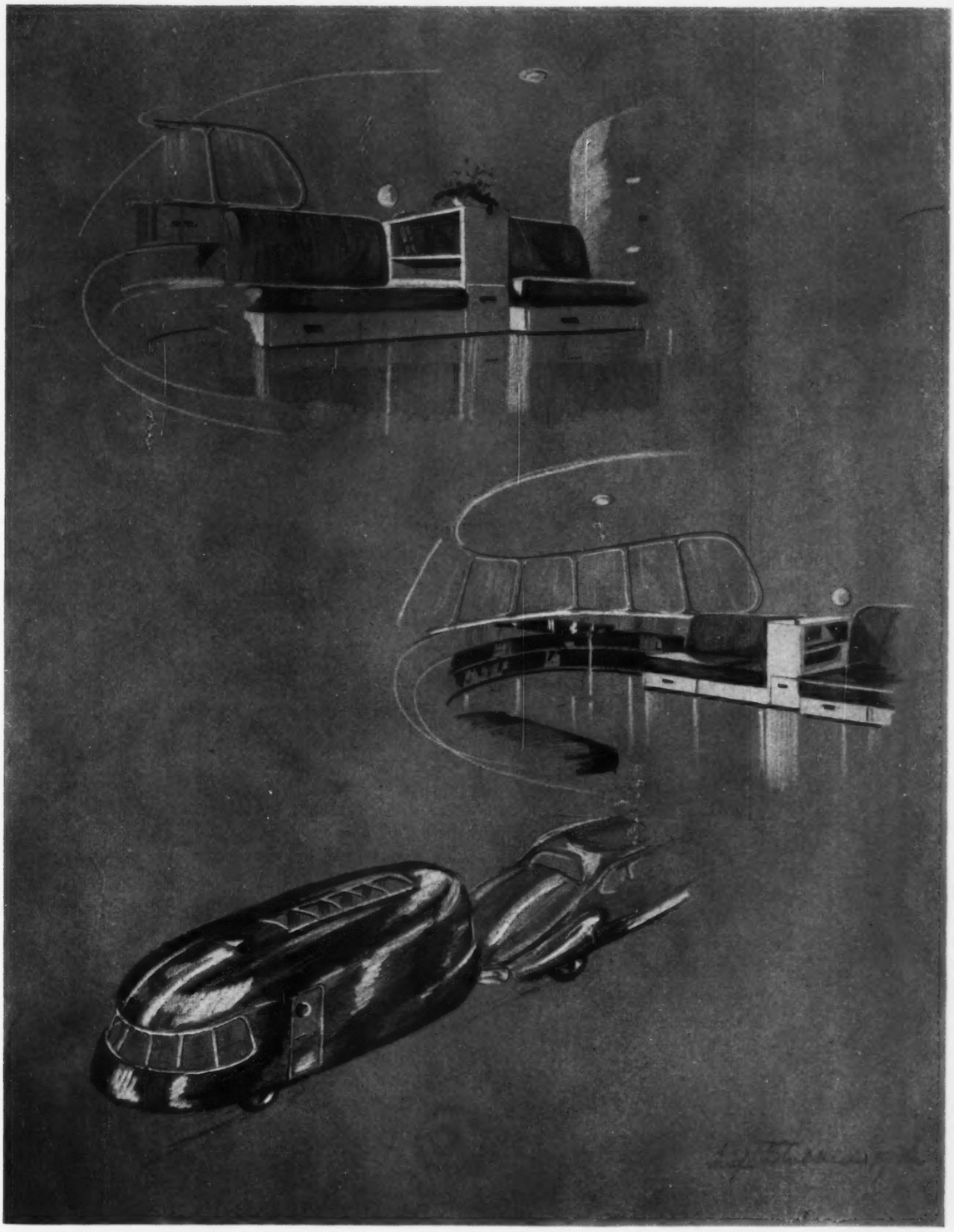
Plan and section of the Wills designed trailer being made by FitzGibbon and Crisp. The design is copyrighted and is shown here for the first time. The other drawings herewith help to show how the finished trailer will appear

In approaching the design of the trailer, two main factors were considered: the necessity for providing in a very limited space the comforts and living requirements of a house, and the manufacturing processes involved in mass production. A trailer is neither a house, pullman car, yacht, nor airplane. Perhaps the nearest thing to it is a land houseboat.

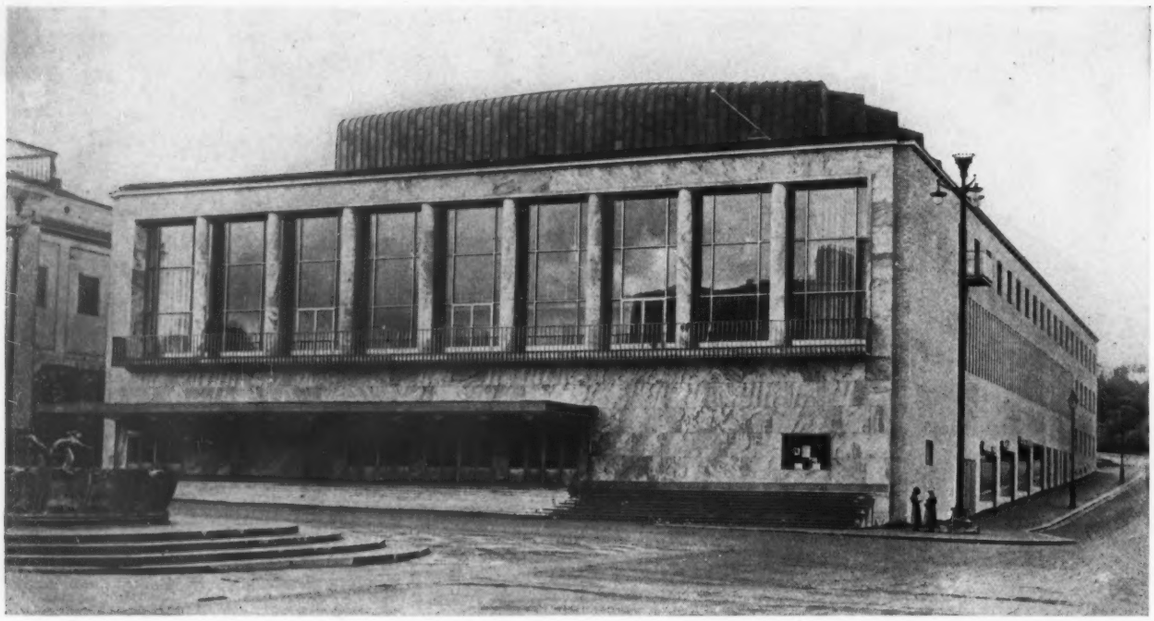
All the necessary functions were first listed —food preparation, dining, entertaining, sleeping, playing, bathing, etc.—and under each heading was noted space and storage requirements. Most of these are indicated on the plan. The design was then worked out as logically as possible, utilizing every bit of space and taking advantage of folding and dual use furnishings to the limit as the plans show.

The result is a trailer with maximum size living space, not broken in the middle by partitions or built-in furniture. The windows are grouped, rather than spotted indiscriminately and storage space for baggage is accessible inside, not outside the trailer. A pullman type berth provides seats on both sides in the daytime and opens across to make a double bed at night. The other couch opens up to make an upper and lower berth. Overall dimensions are 19′ 10″ long, 7′ 0″ wide, and 6′ 6″ high.

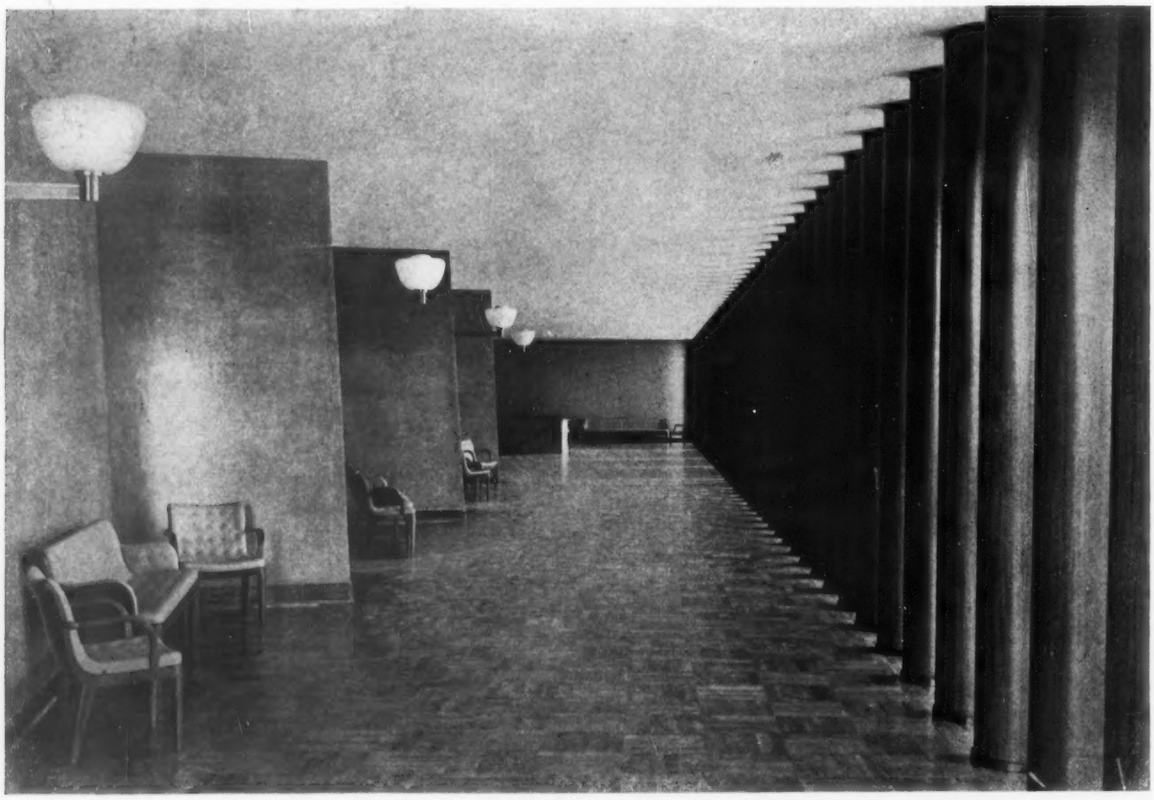
Streamlining was followed as much as possible on the exterior but compound curves were avoided to cut down on the expense of special machinery for production.



Interior and exterior sketches drawn on tinted paper by Hugh Stubbins to visualize the new trailer designed by Royal Barry Wills for FitzGibbon & Crisp, Trenton



A recent European building of more than passing interest is the Gothenburg, Sweden, Concert Hall by Nils Einar Eriksson, Architect. Its front wall of light Gropptorp marble and its side walls of cream colored brick give it a less sombre feeling than that found in many music halls of the past. The upper promenade (below) is flanked on the street side by 51 polished mahogany columns spacing 52 engraved Orrefors glass panels tracing the story of Music. Two of the panels are shown on the next pages



One of the Orrefors glass windows designed by Simon Gate to go in Nils Einar Eriksson's Gothenburg Concert Hall. The series depicts the history of Music

A window in Orrefors glass from the new Gothenburg Concert Hall; this one was designed by Edward Hald

ARCHITECTURAL EDUCATION

BY RALPH WALKER, F. A. I. A.

"THE school is not a scheme repeated in the same way year after year, but grows by the interweaving of generations of students and their creative solutions of their problems to an ever-increasing intellectual and practical importance."—*Eugene Steinhof.*

Generally, in discussions on architectural education, more expression is given to ways and methods than to predetermine a desired result.

What we call a formal education, that which we obtain in schools and under schoolmen, can rarely be more than an initiation into the possibilities of future development.

In early education there should be no statement as to how to make architecture or even how to become an architect, but rather what are the fundamental needs of an approach to these results.

In a very broad sense an architectural education, one thought of as being continuous, might be based on the development of four factors: the evaluation of experience, the creation of a philosophy, an understanding of limitations, and an appreciation of imagination.

Experience: It would seem that the growth of knowledge is progressive; it is evolutionary and is best built step by step, each step being a fully realized and appreciated experience. Its value is based on the self-development of judgment. It can never be abstract but must have a definite meaning to the individual in his *own* relation to society.

Acquiring knowledge comes through an understanding of the whole by a little-by-little accomplishment of detail. Nor has detail any meaning except as a part of a whole.

The major problem of any professional pedagogy is to promote a desire for further experience and to do it in such a manner as to make that desire insatiable.

Architecture is a vital, living thing. Architects do not collect experience for its own sake but to give depth to the practice of an art and a science; an art in which understanding may be broadened only through practice.

The student then, first, should be led and guided to choose problems within his experience, and later to choose what further enlargement of experience he desires.

For the only volition in gaining experience should be within the student himself. In the final analysis his success comes from an appreciation of his own experience.

No school should exist merely to produce graduates but to give to the world men whose lives have been opened to judge social and architectural experience and place a value upon it.

Philosophy: The architect in his life must somehow or other attain the ability to coordinate thought and further to evaluate his thoughts and experience into a personal method of work. He should be able not only to make research so as to gather information for a clear definition of a problem, but he must understand the fundamental *whys* of the problem itself.

He, surely, must learn to tie up the world outside to his own judgment of it.

How can architecture be other than an abstract theory or at best a series of external formulæ unless it can agree with a philosophy which can be enlarged to meet new social circumstances as they arise.

The architect has the opportunity of working out a philosophy for a very strong and definite position of leadership in the community, especially where it is affected by his design and his abilities.

Architecture is a profession that can be governed by philosophy in that it is possible to study principles of human conduct and thought and place them in relation to physical sciences.

That the architect must be a philosopher is obvious, else he becomes bogged down in ma-

terials and abstractions to the extent of forgetting the underlying *why* for which he designs.

Limitations: Every architectural problem is bounded by limits, whether it be a room, a building, or a city. One may not satisfactorily or safely offer an imaginative solution unless these limits are clearly stated, defined, and *more,* truly understood. There are not only practical limits but there are other limitations of the spirit which bound our affairs.

We are apt to confuse and confine economics with the problems confronting the banker fraternity, whereas they arise continually to limit our efforts; not alone the economics of money but those of effort and especially the relationships between handicraft methods and new machine techniques.

Anticipation of hoped for results often influences the economics of building to its detriment.

The architect must join in a very definite attempt to bring intellectual order out of the chaotic relationships between the material possibilities of our civilization and our continued spiritual needs.

An appreciation that the limits, whether they are financial or spiritual, are a real part of any architectural problem is a very necessary part of education.

Imagination: Most architectural imagination has nothing to do with these three previous factors, but is generally a rehash of the imaginings of others.

It should not be difficult to understand that imagination is no "will-o'-the-wisp" but can be solidly based on knowledge, experience, and fixed limitations; that the mind unsupported by these can never be a successful springboard for genius.

The world is apt to think that the genius of imagination is something which flames into being without background.

Nothing is further from reality, for imagination at best is a free presentation of coordinated thought and well digested experience. It is a marked ability to visualize a solution from ascertained facts. Imagination is much too often confused with gusty romance, or in architectural education a lusty and at the same time weary filling up of a steady crescendo of enlarged mounts of paper; the cute contrast of white circulation, the meaningless circles, the dippy dots which filled up the vacuity of ideas, and which at the same time paraded as imagination. It never was reasonable!

We are beginning to understand that more real imagination is required to put together beautifully a limited number of ideas and achieve design.

* * * * *

What is wrong with architectural education?

The great difficulty is that it has tried to make draftsmen and not broadly educated men. Another fault is that it has divorced itself from actual practice, therefore it could not be anything but imitative. Withdrawn from reality, the architect has been trained to forget today's values, to prize the work of the past, and to be fearful of the finger of scorn, especially as an accusation of bad taste. He has been swaddled in lavender and old lace. Meanwhile, because of a bad training in architecture and the arts, and at present a lack of a true philosophy of architecture, the machine age and its prototype the factory is carrying on to repletion a sterile reign of ugliness.

From 1900 on, as regards architecture, have been years of transition and the beginnings of a revolt against the restrictions of the past. Throughout the world, architects, working under conditions appreciated as belonging especially to their generation, have stressed the need for a new approach more consonant with these conditions, and have attempted to meet them with a philosophy related to new ways and new ideas.

Are we foolhardy if we put on the prophet's cap and say that the next generation will continue to be in revolt against the past? Are not all the indications pointing toward a struggle of youth to find himself politically, economically, and emotionally in a new world? Must not then architectural education anticipate, in part at least, the vision of the result to be gained by that struggle?

And it is not enough to say the answer is the "*machine.*"

PENCIL POINTS DATA SHEETS

Prepared by DON GRAF, B.S., M.Arch

FACTS AT YOUR FINGERTIPS

This month is the fifth birthday of the PENCIL POINTS *Data Sheets*. Started in January, 1932, they made their bow to the architectural world without any fanfare or pre-parturition gossip that we were blessed-eventing. The child has grown robust and lusty and now has some 12,000 followers. The *Data Sheets* were sired by *Architectural Necessity* and dammed by *Priority*. There are several other children by the same father but there can only be one by the mother.

We want to thank all the readers who have sent their birthday greetings to the *Data Sheets* on the occasion of this fifth anniversary. The *Data Sheet* Department also received so many Christmas greetings that it is impossible to answer them all personally. We are very happy that so many of you thought of us and we wish all you *Data Sheeters* a happy, healthy and prosperous 365 in '37!

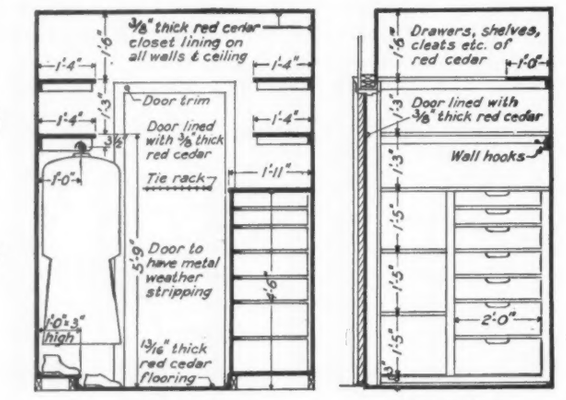
There are two pages in the advertising section that will interest the *Data Sheeters*. On page 14, the Structural Gypsum Division of American Cyanamid & Chemical Corporation is offering a brand new set of *Data Sheets* on roof and floor construction. On page 36 is a special

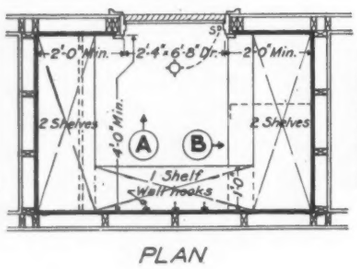
CEDAR CLOSETS

Index No. **D20b** PLANNING

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

SET 11 JAN 1937


3/8" thick red cedar closet lining on all walls & ceiling
Door trim
Door lined with 3/8" thick red cedar
Tie rack
Door to have metal weather stripping
1'-0" x 3" high
13/16" thick red cedar flooring
ELEV. A
Drawers, shelves, cleats etc. of red cedar
Door lined with 3/8" thick red cedar
Wall hooks
2'-0"
ELEV. B
Scale: 1/4"=1'-0"



Existing closets that have plaster or wallboard finish should first have furring strips applied as a nailing base for red cedar. New closets can be finished likewise. Also red cedar can be nailed directly to studs by first lining closet with heavy odorless building paper.

The value of cedar in protecting clothing lies in the fact that it kills the newly hatched or young larvae of clothes moths. Well-made chests (or closets) of red cedar, *juniperus virginiana*, heartwood, can be depended upon for protection against clothes moths — provided the articles to be placed in them are first thoroly brushed, combed or otherwise treated to remove the older clothes moth larvae.

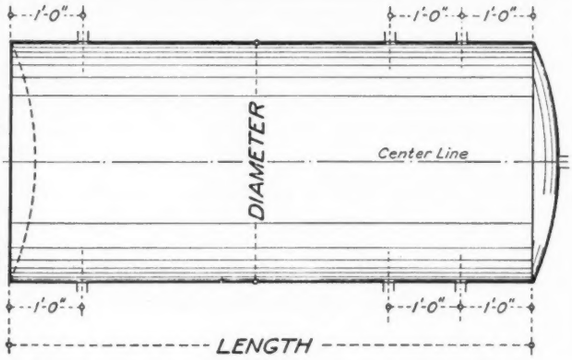
The aroma, or the persistent characteristic of red cedar heartwood, is due to a volatile oil present in the wood. As it is the aroma from this volatile oil that protects the clothing, the closets should remain tightly closed at all times, except when clothing is being removed or placed in them.

A lined closet will give off its aroma indefinitely. Red cedar when exposed to the air for long periods of time tends to seal itself on the surface. The closet can be kept efficient by scraping the surface lightly, at long intervals.

HOT WATER STORAGE TANKS

Index No. **E1g** MECHANICAL

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF



SET 11 JAN 1937

In accordance with unanimous action of 2 general conferences of manufacturers, distributors and users of hot water storage tanks, the U. S. Department of Commerce recommends that simplified dimensions and capacities of hot water storage tanks be established as follows: The tanks to be made in 2 working pressures; 65 pounds classified as *standard*, 100 pounds classified as *extra heavy*. Each tank is to be stenciled with its classification, working pressure, and name and address of its manufacturer. There are 6 tappings in each tank, placed as shown in the diagram above. 11x15-inch manholes may be placed either in the shell or the convex end. 4x6-inch hand holes may be located as desired. The tanks are interchangeable for either horizontal or vertical installation.

STANDARD TANK SIZES

Diameter	*Length*	*Gallons*	*Diameter*	*Length*	*Gallons*
20"	5 ft.	82	42"	7 ft.	504
24"	5 ft.	118	42"	8 ft.	576
24"	6 ft.	141	42"	10 ft.	720
30"	6 ft.	220	42"	4 ft.	1,008
30"	8 ft.	294	48"	10 ft.	940
36"	6 ft.	318	48"	16 ft.	1,504
36"	8 ft.	423	48"	20 ft.	1,880

MINIMUM SIZE HEATING COILS

Tank dimensions		*Size of pipe*	*Minimum length of heating coil*	*Tank dimensions*		*Size of pipe*	*Minimum length of heating coil*
Diameter	*Length*			*Diameter*	*Length*		
20"	5 ft.	1"	14 ft.	42"	7 ft.	$1\frac{1}{2}$"	22 ft.
24"	5 ft.	$1\frac{1}{4}$"	14 ft.	42"	8 ft.	$1\frac{1}{2}$"	26 ft.
24"	6 ft.	$1\frac{1}{4}$"	18 ft.	42"	10 ft.	$1\frac{1}{2}$"	34 ft.
30"	6 ft.	$1\frac{1}{4}$"	18 ft.	42"	14 ft.	$1\frac{1}{2}$"	50 ft.
30"	8 ft.	$1\frac{1}{4}$"	26 ft.	48"	10 ft.	2"	34 ft.
36"	6 ft.	$1\frac{1}{2}$"	18 ft.	48"	16 ft.	2"	58 ft.
36"	8 ft.	$1\frac{1}{2}$"	26 ft.	48"	20 ft.	2"	74 ft.

offer on single canvas binders that will be to the advantage of those who are building their *Data Sheet Library* one volume at a time.

We start off the new year with the *Data Sheets* in a new dress. The new format was adopted after considerable study, to make the pages attractive and still more easy of reference. Do you like it?

DATA SHEET NO. D20b. The U. S. Department of Agriculture conducted a series of tests on the efficacy of red cedar in protecting clothes against the ravages of moths. This *Data Sheet* has been prepared in accordance with the findings.

DATA SHEET NO. E1g. As part of the simplification program, the U. S. Department of Commerce have established certain standard storage tank sizes which are given on this *Data Sheet*. Many manufacturers make other sizes but it will be found that most of them have available all those which are listed.

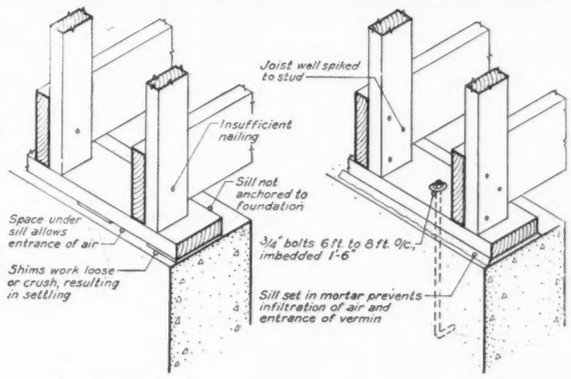
DATA SHEET NO. F5e. The proper anchoring of sills is a matter sometimes disregarded by builders but it is extremely important to do it correctly.

DATA SHEET NO. D20a. The President's Conference on Home Building and Home Ownership has generously allowed the reprinting of this information contained in Volume V of their series of publications, "House Design, Construction and Equipment."

SILLS IN FRAME CONSTRUCTION

Index No. **F5e** CONSTRUCTION

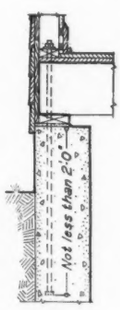
PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF


Joist well spiked to stud
Insufficient nailing
Sill not anchored to foundation
Space under sill allows entrance of air
Shims work loose or crush, resulting in settling
¾" bolts 6 ft. to 8 ft. o/c, imbedded 1'-6"
Sill set in mortar prevents infiltration of air and entrance of vermin
POOR PRACTICE
GOOD PRACTICE

SET **11** JAN 1937

SIZE OF SILL. For small buildings of light frame construction, a 2"x6" sill is large enuf under most conditions. For 2-story structures, and in localities subject to earthquakes or high winds, a sill 4" in (nominal) thickness is desirable. It affords more nailing surface for the diagonal sheathing. A 4" sill permits a much more satisfactory lap splice.

ANCHORING. Where high winds are at all probable, it is important that the building be thoroly anchored to the foundation. In fact, anchoring is desirable and good practice in all localities. It is best accomplished by imbedding ¾" bolts, 6 to 8 ft. o/c, to a depth of 1'-6". They should project sufficiently thru the sill to receive a good sized washer and nut. Severe wind conditions may require anchoring as shown at the left.



SHEATHING. That the full advantages of anchoring may be obtained, especially where wind storms occur, it is essential to put sheathing on diagonally and to nail it securely to the sill and wall plates. This provides a tie between the sill and the structure above.

SPLICING THE SILL. Where a 2"x6" is used as a sill, it is entirely satisfactory to butt the ends if it is properly anchored. Where the sill is built of two 2"x6" pieces, the joints in the 2 courses should be broken. A solid sill 4" thick may be halved, or butted where properly anchored.

See Bulletin No. 145, "Light Frame House Construction," by the Federal Board for Vocational Education.

AVERAGE ROOM SIZES

Index No. **D20a** PLANNING

PENCIL POINTS DATA SHEETS PREPARED BY DON GRAF

Rooms	Bungalows	2-Story Detached	Row Houses
KITCHEN	8'-3" × 11'-3" — 92½¢	9'-1" × 11'-8" — 107¢	8'-0" × 12'-0" — 96¢
DINING ROOM	12'-4" × 10'-7" — 131¢	13'-10" × 12'-0" — 166¢	14'-1" × 11'-1" — 156¢
LIVING ROOM	17'-4" × 12'-5" — 216¢	21'-4" × 13'-2" — 281¢	16'-0" × 13'-6" — 216¢
BED ROOM #1	12'-7" × 10'-8" — 134¢	16'-5" × 12'-8" — 208¢	14'-0" × 11'-11" — 166¢
BED ROOM #2	11'-8" × 10'-5" — 122¢	13'-5" × 11'-5" — 153¢	12'-11" × 9'-10" — 127¢
BED ROOM #3		12'-7" × 10'-0" — 126¢	11'-6" × 8'-5" — 97¢

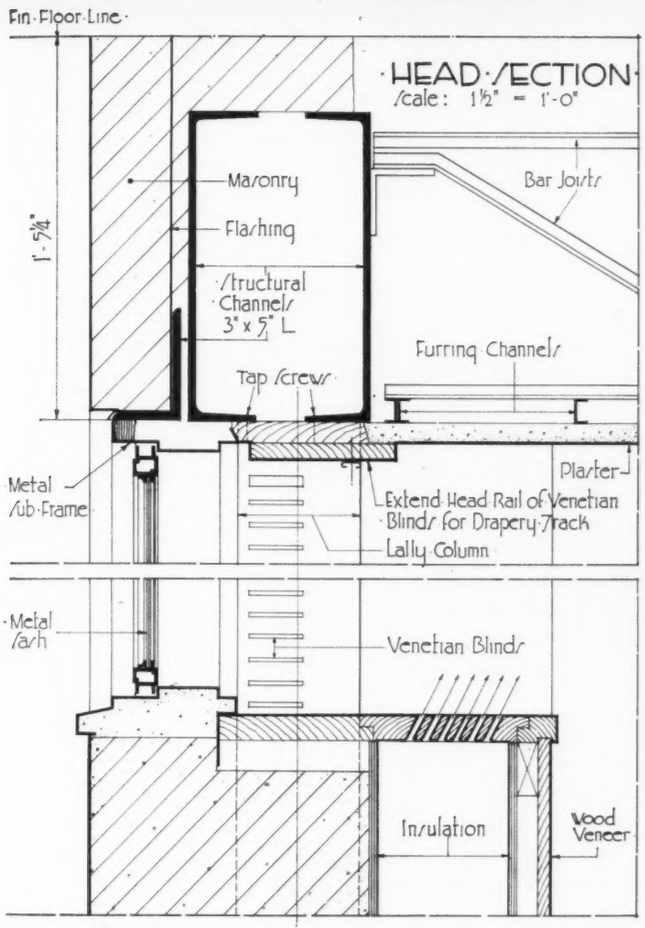
SET **11** JAN 1937

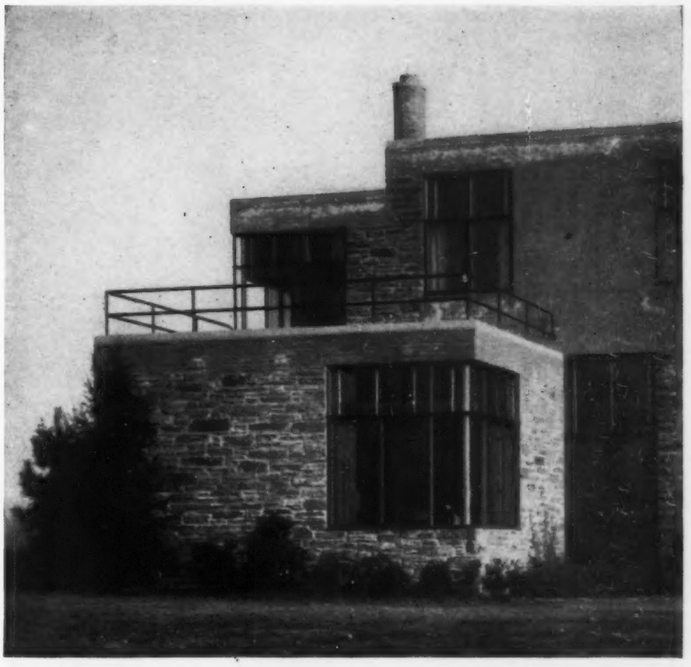
SOURCE OF INFORMATION. Houses were inspected in 31 cities during a survey conducted by staff members of the Division of Building and Housing of the U. S. Department of Commerce. The price range of the houses inspected was from $1950 to $9850.

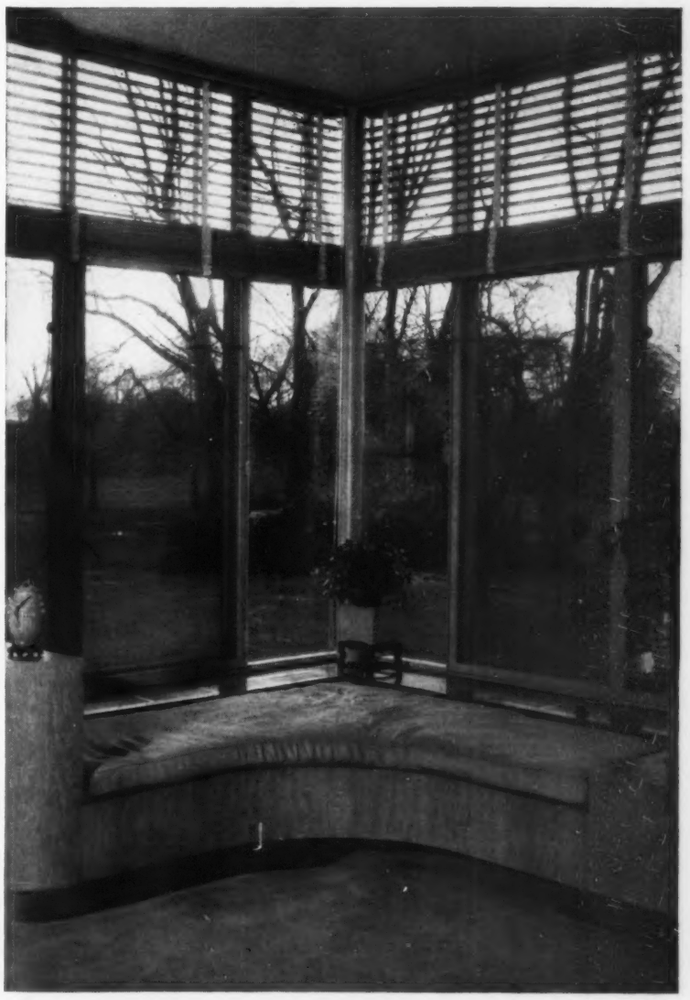
ROOM SIZE VARIATIONS. *Kitchens* were found more nearly alike in size than any other room. Most of them contained about 100 square feet with the width about three-quarters of the length, so that 8'-10" x 11'-8" would be typical. The variation in *Living Rooms* was from 11'-0" to 15'-0" in width, and 15'-0" to 22'-0" in length. The width was commonly about two-thirds of the length. The width of *Dining Rooms* tended to be about three-quarters of the length with an area about half again as large as the kitchen. *Bedrooms* ran noticeably larger in 2-story houses than in 1-story houses. The owner's bedroom in many 2-story houses was over the living room and about the same size.

CEILING HEIGHTS. Ceiling heights were usually greater in the South than in the North, presumably because they are more comfortable in warmer climates and also on account of custom. In houses above the lowest price range there was an increasing tendency to obtain a higher living room ceiling by dropping its floor 1 or 2 steps lower than the rest of the first floor.

Reprinted by permission of the President's Conference on Home Building and Home Ownership.

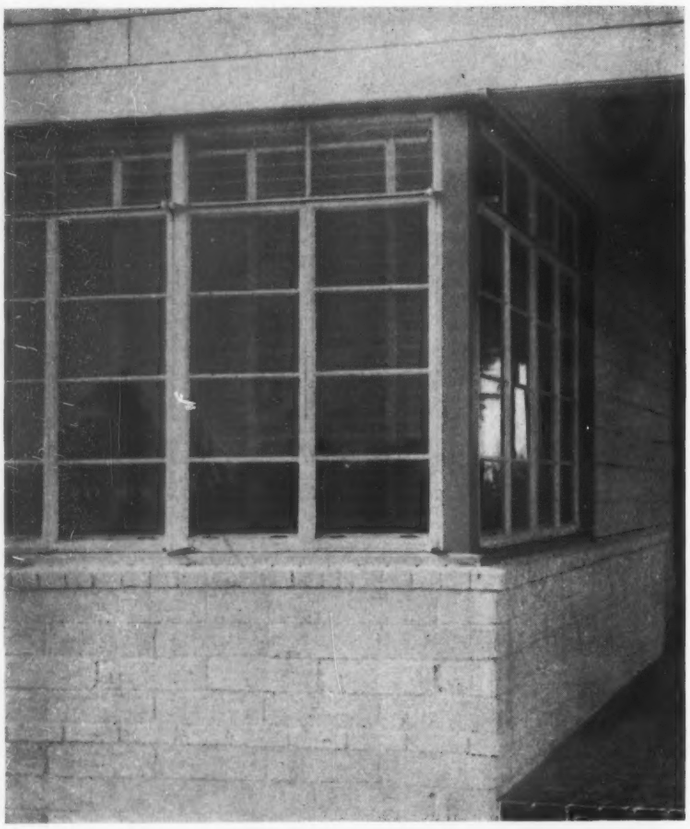


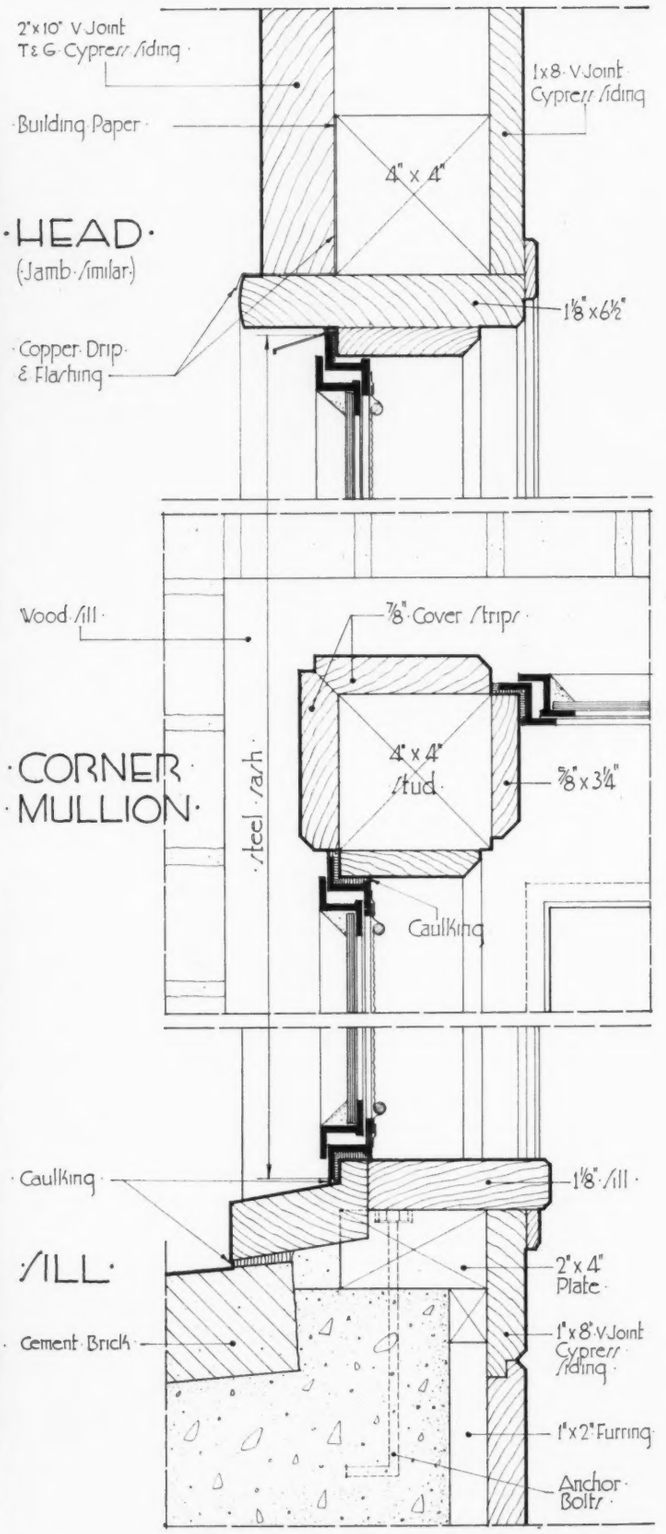




GEORGE HOWE
Architect

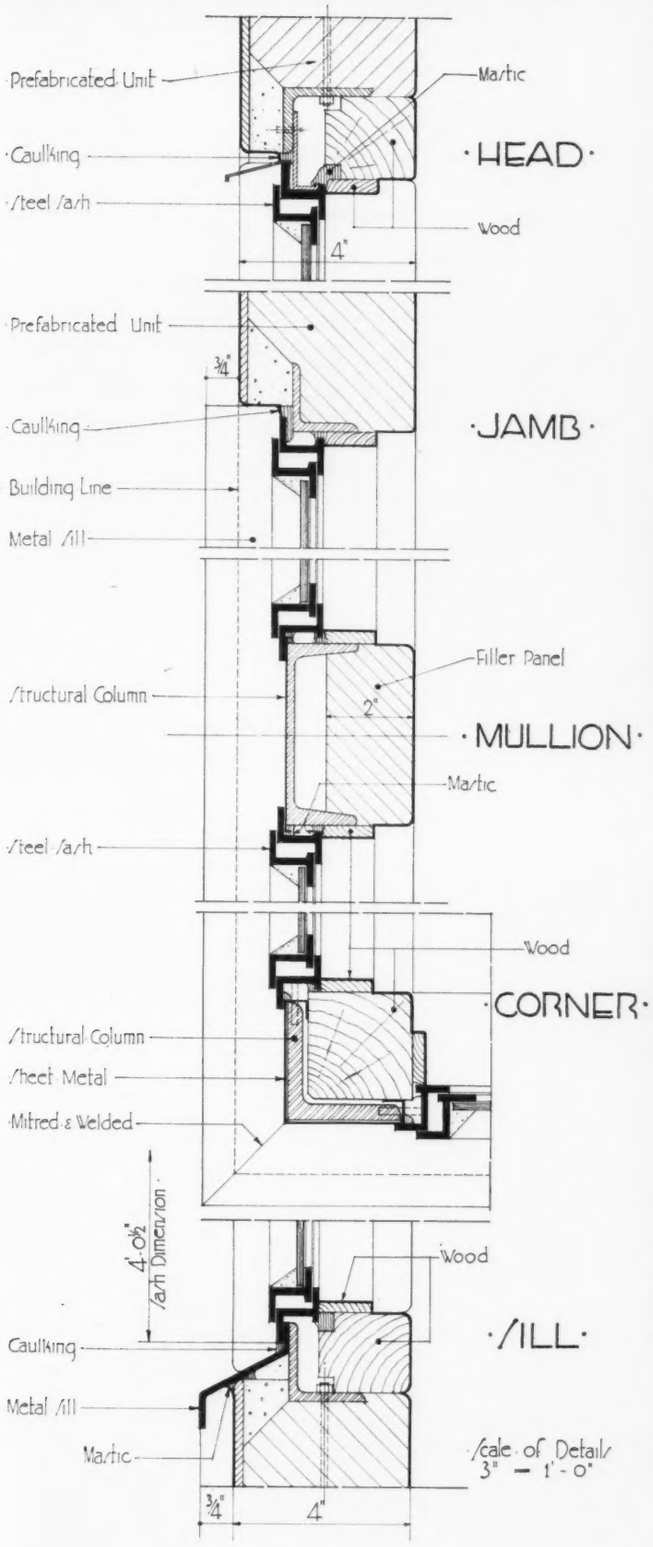
Richard J. Dooner



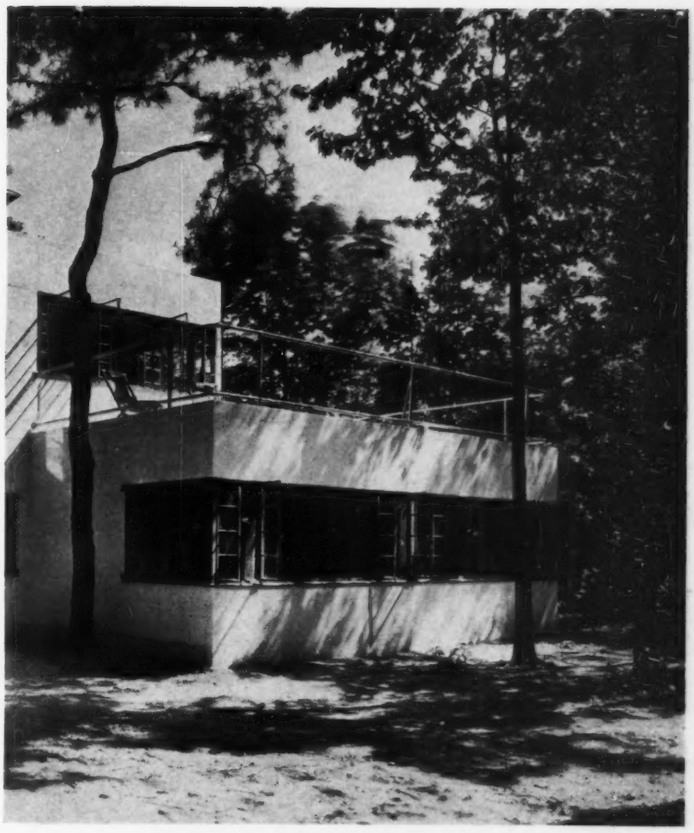


Scale of Details: 3" = 1'-0"

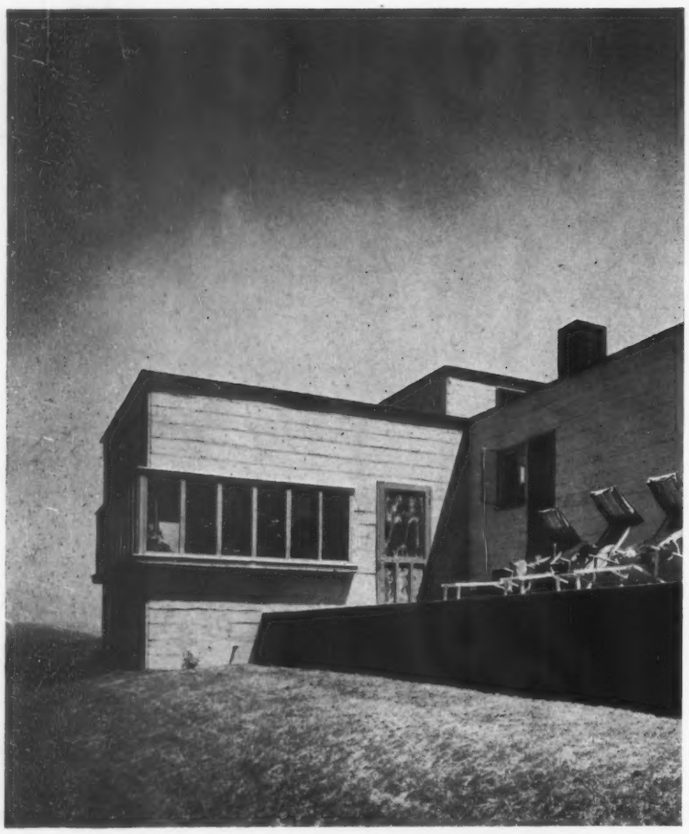
ROBERT LAW WEED
Architect



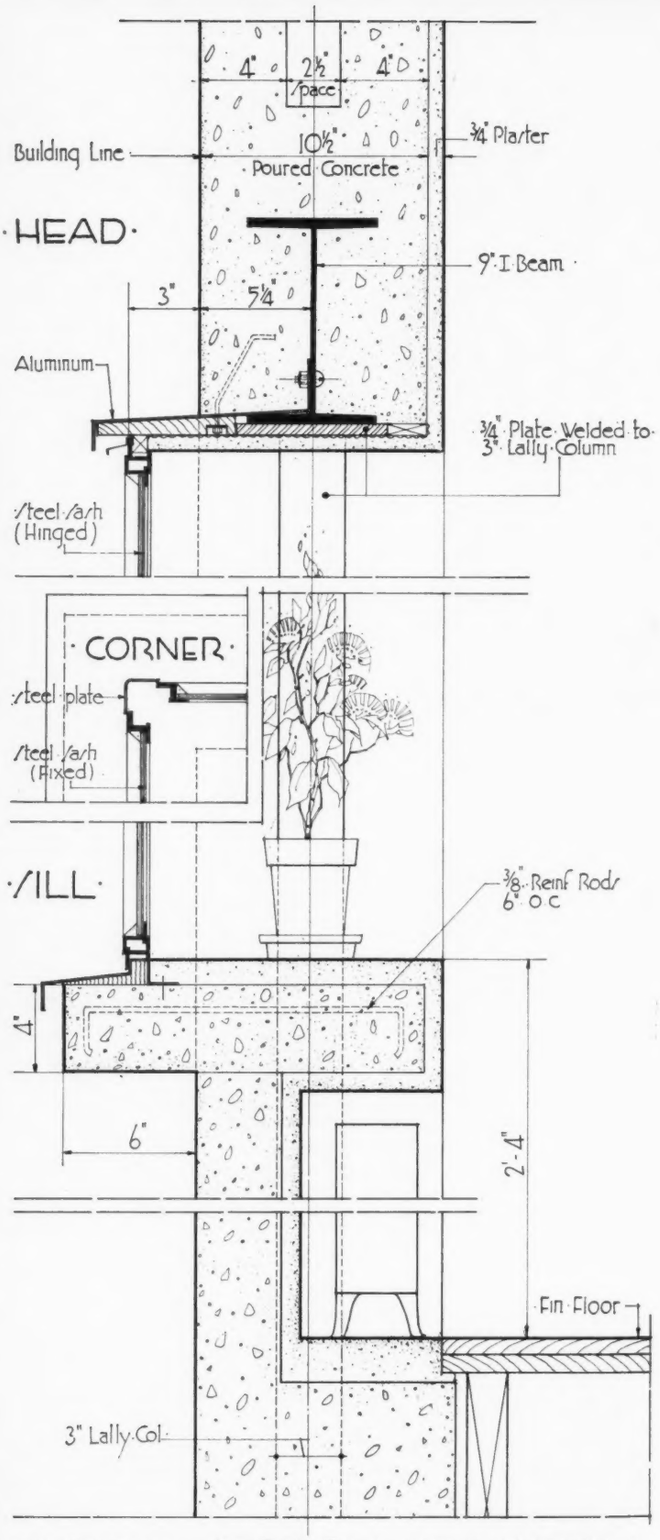
ROBERT · L · DAVISON
JOHN · CALLENDER
Designers



J. J. Lincoln



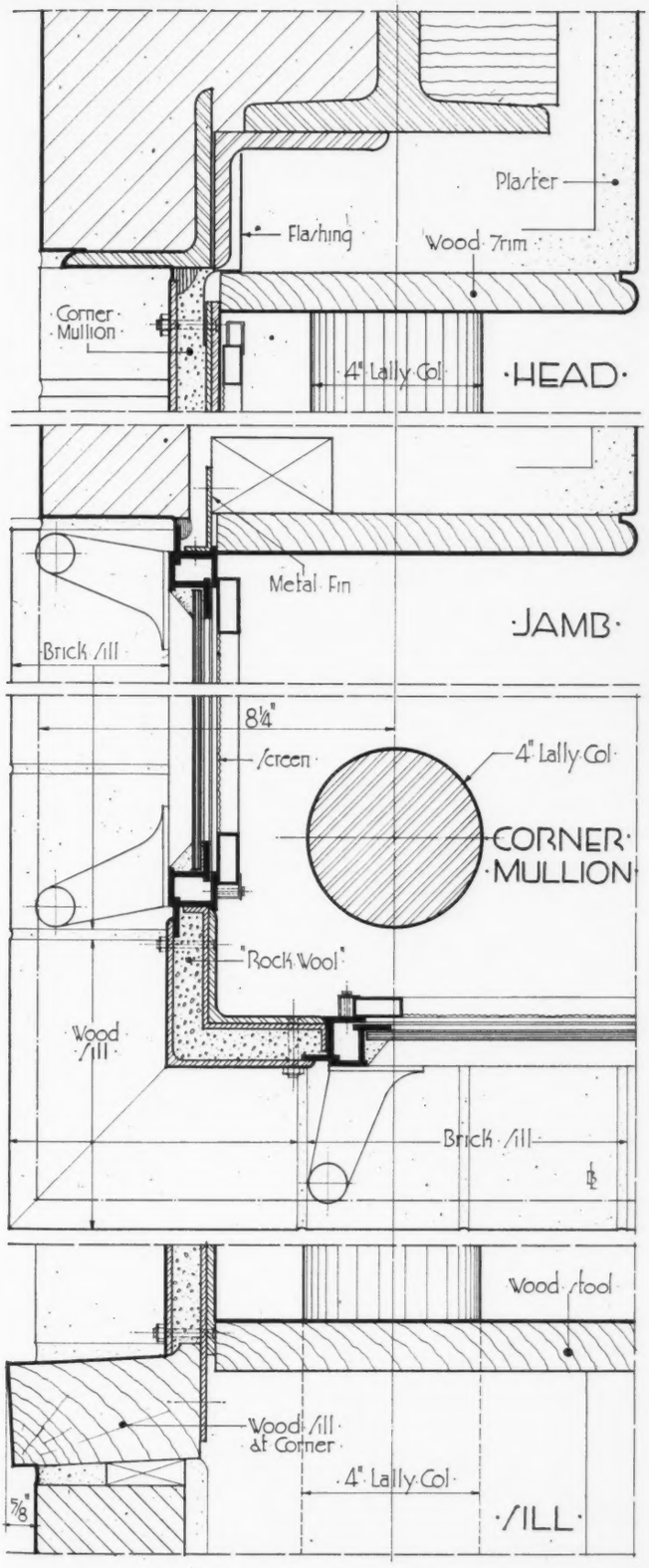
J. F. Lincoln



TYPICAL SECTION OF WINDOW

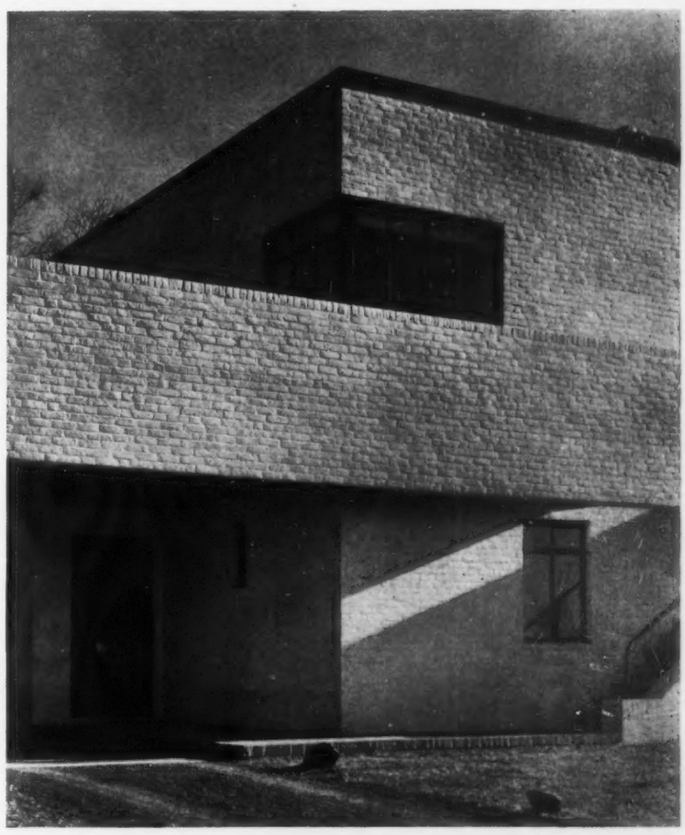
Scale: 1½" = 1'-0"

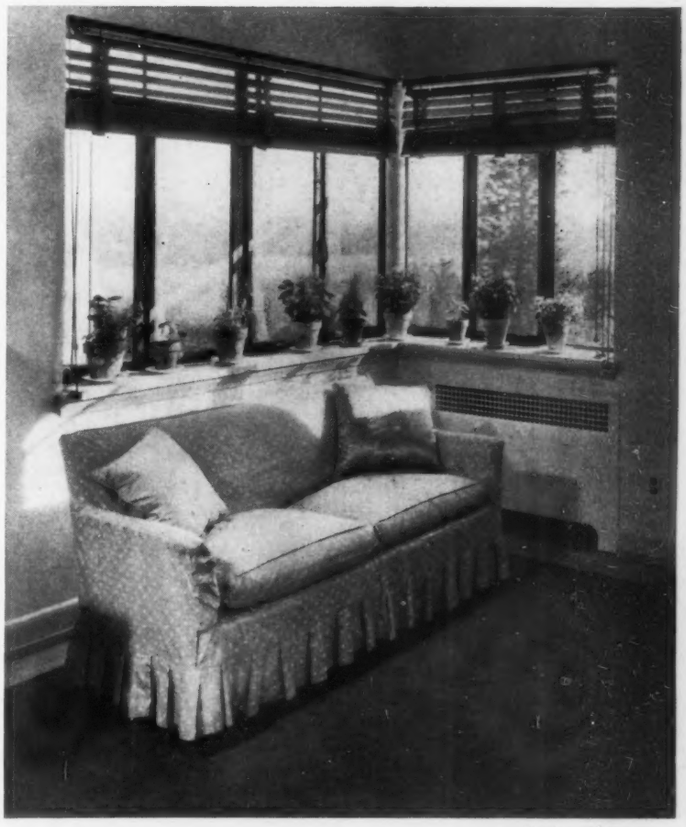
A. LAWRENCE KOCHER
GERHARD ZIEGLER
Architects



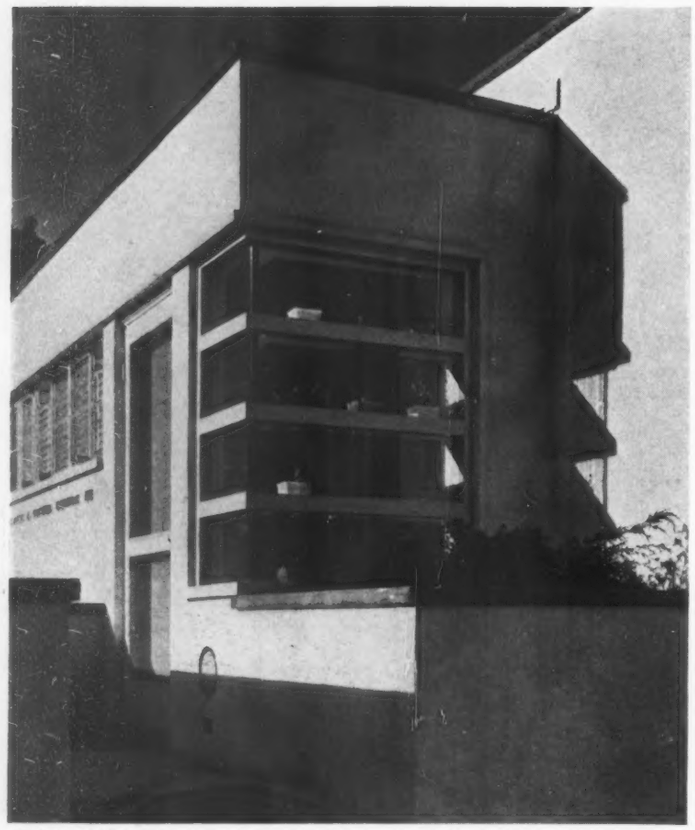
TYPICAL SECTION THRU CORNER WINDOW
Scale: 3" = 1'-0"

TALCOTT & TALCOTT
Architects

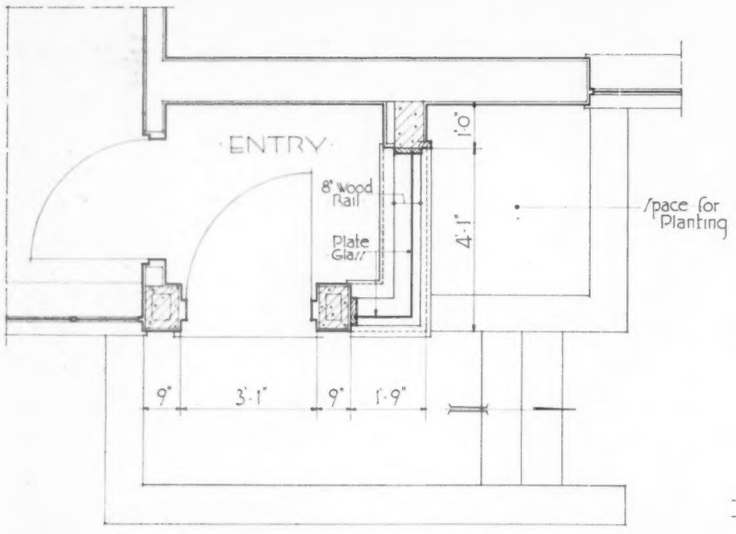




Richard Garrison



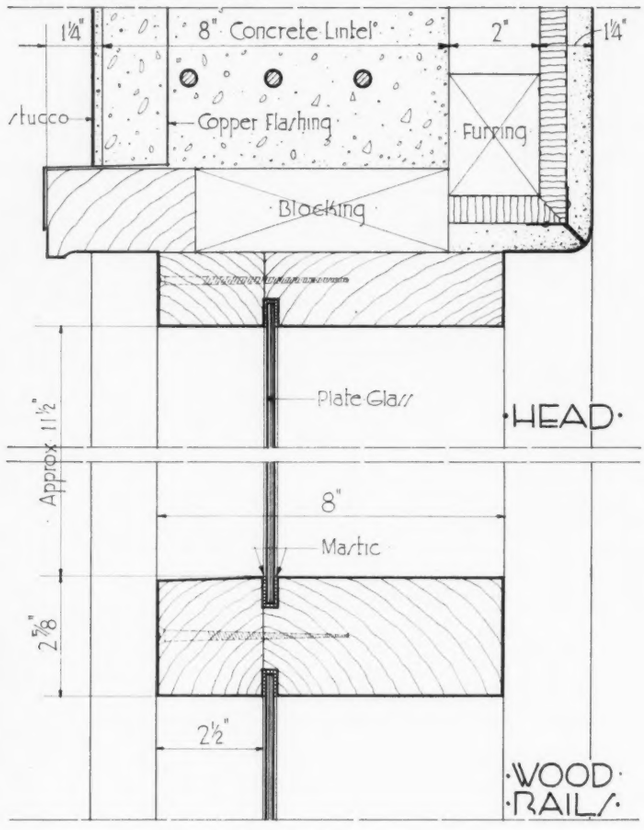
Arthur C Haskell

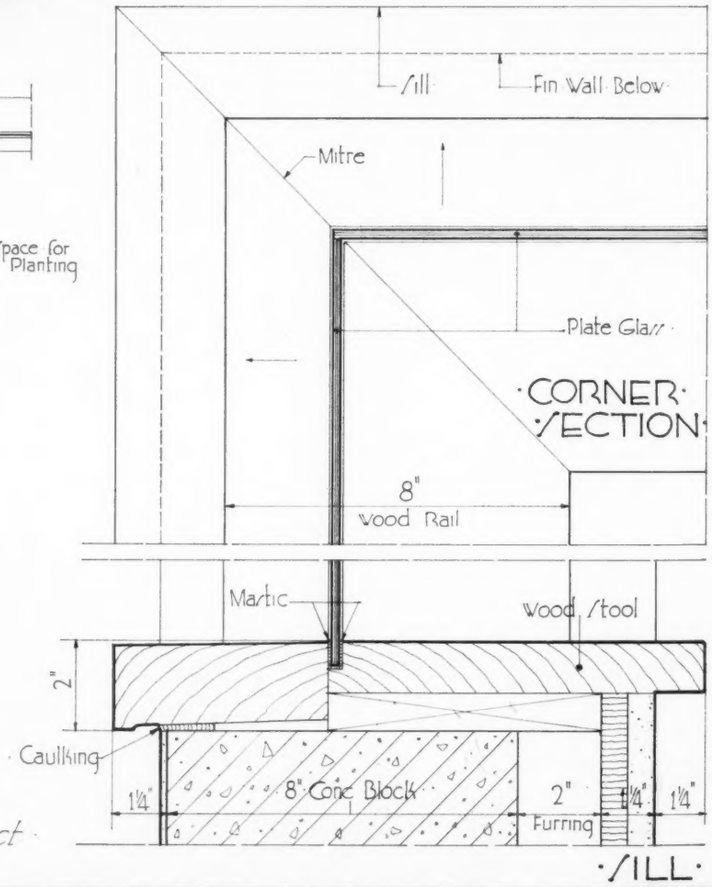


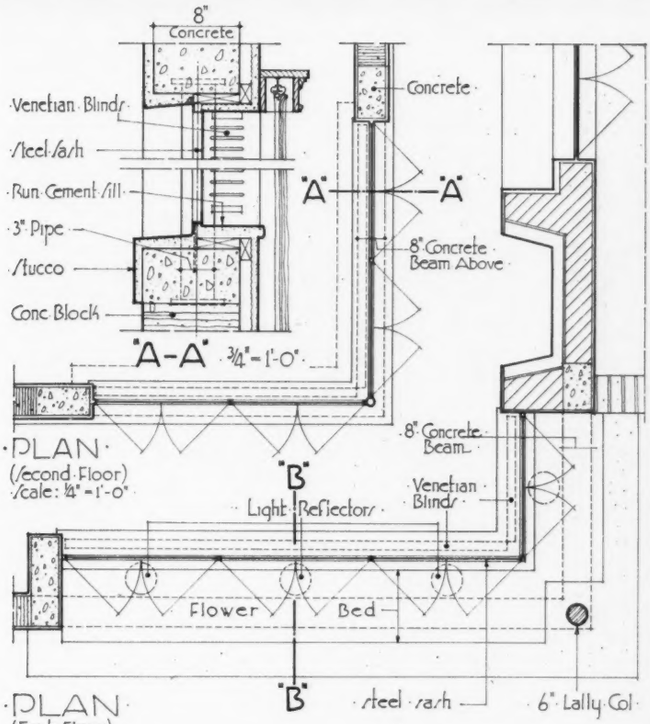
·PLAN·OF·ENTRY·/HOWING·
·CORNER·WINDOW· /cale: ¼"=1'-0"

·ROYAL·BARRY·WILL/· *Architect*
·HUGH·A·/TUBBIN/· *Associate Architect*

/cale of Details: 3" = 1'-0"

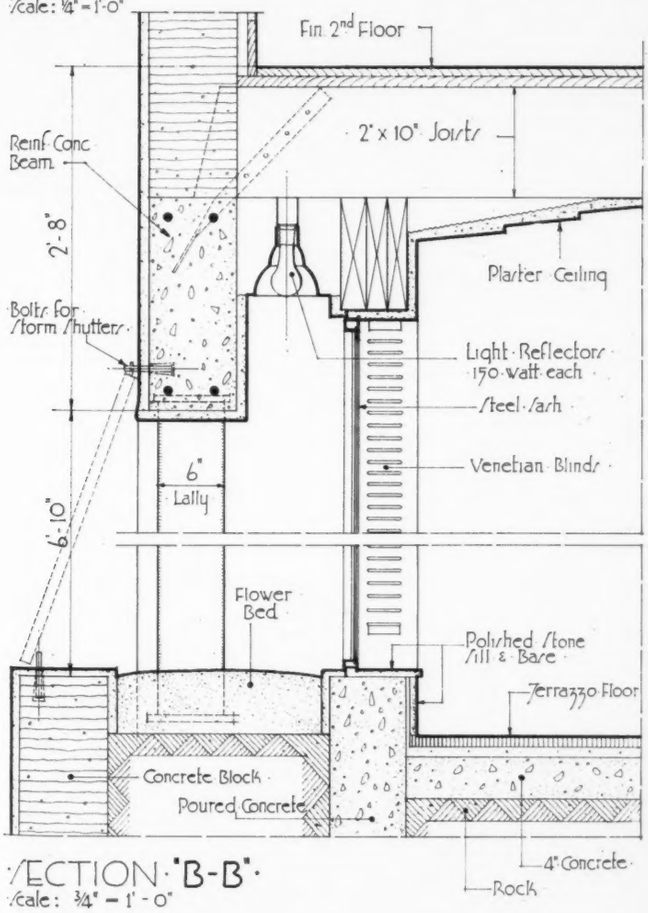






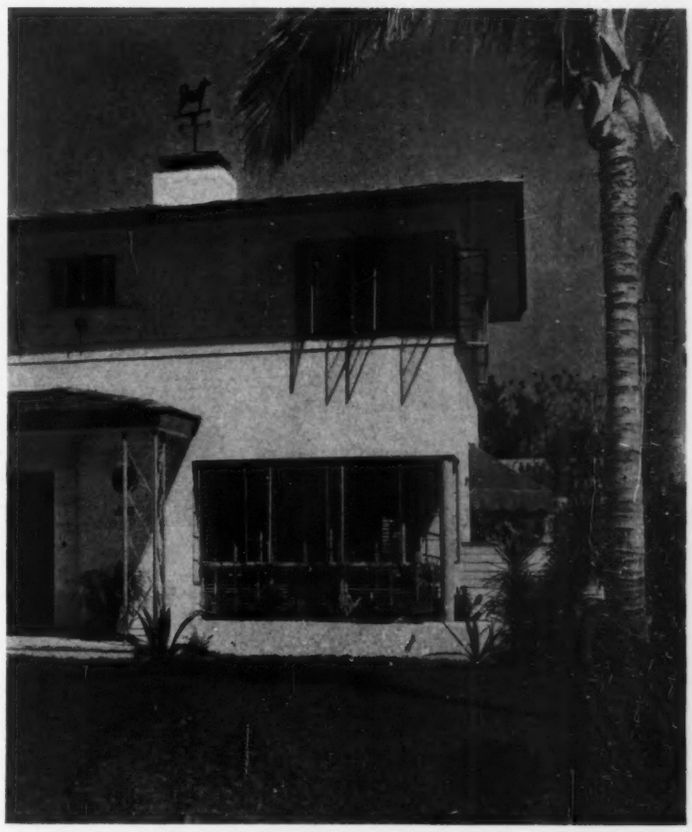
PLAN
(Second Floor)
Scale: 1/4" = 1'-0"

PLAN
(First Floor)
Scale: 1/4" = 1'-0"



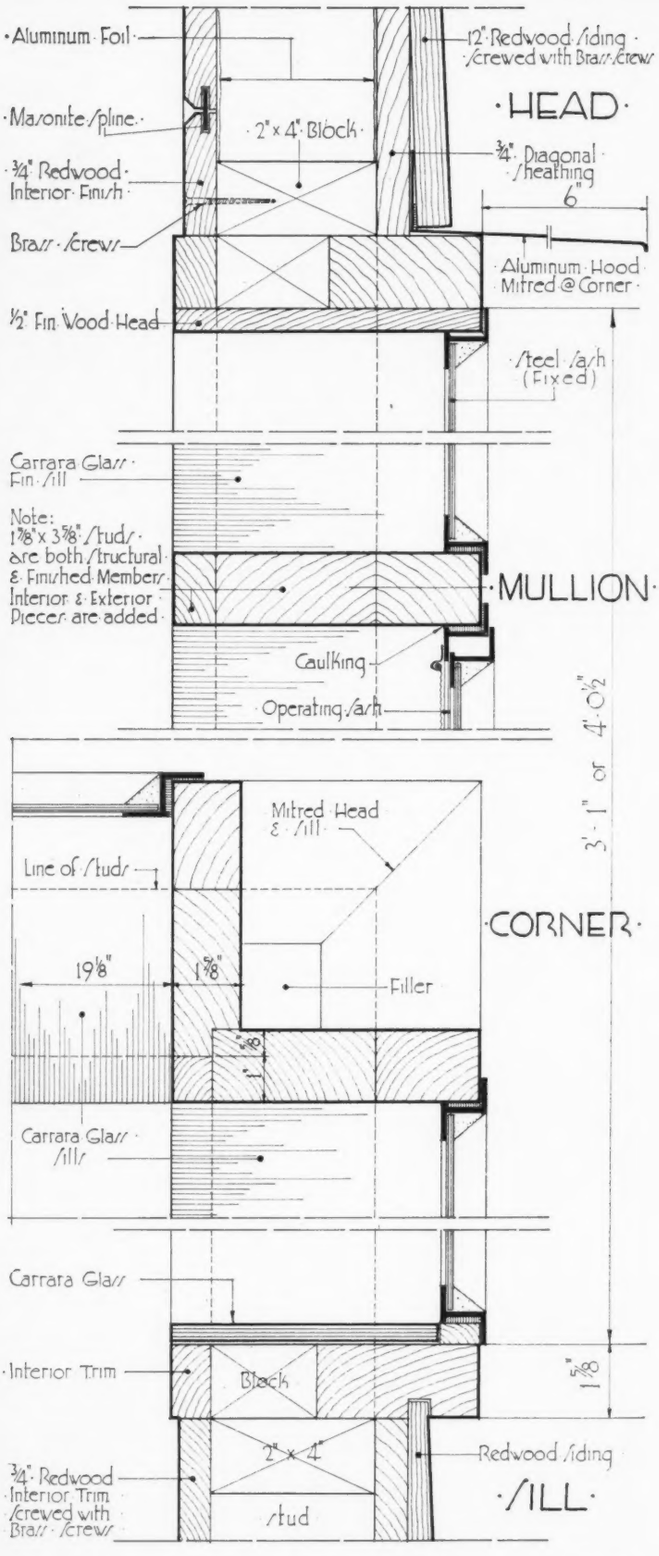
SECTION "B-B"
Scale: 3/4" = 1'-0"

L. MURRAY DIXON
Architect



Samuel H. Gottscho

F. S. Lincoln



TYPICAL SECTION THRU CORNER WINDOW
Scale: 3" = 1'-0"

ROBERT M. BROWN
Designer & Builder

GUPTILL'S CORNER

Happy New Year, folks! And I'm mighty certain it will really be a happier one for many of us than some of those of the recent past.

Sorry I slipped up on my usual Christmas wishes. You see much of this Corner is customarily written well ahead of time, and I just didn't realize, in my excitement about the new competition and everything, when the deadline was reached. And thanks for the greetings I had from some of you! You were "swell" to remember me.

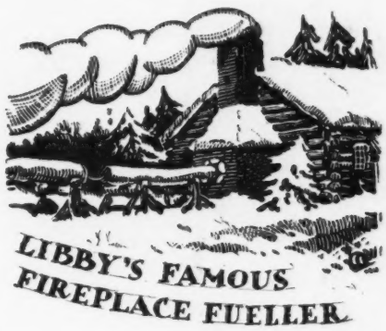
Speaking of the competition, it's queer how your mind gets running on, sometimes. I was walking along a wooded country roadway the other day, and got to thinking of the trees —of how so many of you folks all over the land were sketching trees of one kind or another to send in to our latest sketching contest (see December issue). Perhaps I was a bit daft for a minute (my good friend the eminent psychiatrist Dr. Carroll Leja Nichols says we are often on the border line), but I had the fancy that the trees were nodding and whispering their approval of the fact that all us folks were giving them a bit of friendly attention.

As to trees, I'm writing this in the Adirondack and Green Mountain region where I came for the holidays, and where "trees is trees," to paraphrase Ellis Parker Butler. And, strangely enough, the talk the other night at the local tall story club, of which I have long been proud to count myself a member (though what whoppers some of those fellows tell!), fell around this very subject.

I suppose I really started it on that track myself, though quite unintentionally. Like every architect, as soon as I found that Bascom's fireplace smoked a bit (Bascom was our host that night) because the builder hadn't understood the proper relationship between opening size, flue area, and chimney height, I got to talking shop. Soon I fell to telling the boys about the real he fireplaces we used to have down in my part of the country when I was a boy. And the enormous amount of wood they consumed.

"You see, folks," I began, "we had to depend on fireplaces for all our heat. When I was twelve or so, and Uncle Roscoe Libby was pretty well grown, he made up his mind that after years of filling wood boxes, to say nothing of all the preliminary chopping, hauling, and splitting, he was going to try his darnedest to think up some way to lessen his labors. Being ingenious, he soon worked out an idea that I think will interest you, unless by chance you are already familiar with his 'Libby's Log Lugger and Labor Lightening Fireplace Fueller.'

" 'Twas based on a simple principle. He merely built a huge fireplace in his outside wall, same as most folks had in those parts. 'Twas the indoor type, of course, and its only odd feature (at least at first) was a round hole about a



foot and a half in diameter right plumb through the back of it into the outer air, with a tricky sort of iron door arrangement, quite like a giant camera shutter, to close over this opening to keep out the cold.

"But don't get the notion that his intention was merely to open this door and throw wood onto the fire now and then from outside. No, sir, nothing as simple as that! Instead, he rigged up outdoors a sort of carriage of rollers much like you find in a sawmill, and at such a height that he could feed the butt end of a log right into the fireplace, his tricky doors automatically adjusting themselves fairly well around the log. Then he built his fire as usual (poor man, he *did* have to lug a few kindlings), and as he burned off the end of his log, he gradually cranked more in, as necessary!"

"That was quite a stunt," remarked Doc Weir, a bit cynically, and trying to slip a wink to Judd Peters without me knowing it, "but don't try to make us believe that such a contraption would really work."

"Work!" I retorted, a wee bit peeved but unruffled (for when I'm telling the truth doubts like his never faze me). "Of course it worked, or why would I waste my breath telling you about it? I admit it had its failings at first, but Uncle Roscoe was not stumped. Not he. You see it *was* something of a job to keep cranking the log into position, despite the fact that he had the carriage pitched so that gravity helped a lot. So one fall he chewed a half dozen dime hunks of Fireman's cut plug away, ruminating over the matter, and then on Thanksgiving morning, when he was sitting before the fire cracking nuts for Aunt Sarah, and pausing now and then to give the log-adjusting crank a turn or two, the idea came! And up he jumped and at the thing he went, hammer and tongs, despite Sarah's vehement expostulations, and by nightfall he had doped out the scheme which made his name a fireside word all through that section.

"You see he had noticed what a draft there was in that chimney, which was husky and tall, so he built a big fan in the flue, like the jacks that were used to turn the spits in the old-time houses of Merrie England. This he geared to his log-propelling crank by means of a drive chain and sprocket wheels, and say!—the faster the fire burned the greater the draft became, rotating the fan, turning the crank, and drawing the log into the flames by degrees, exactly as needed!"

Frankly, I didn't quite like the expression on two or three faces as I concluded this recitation, nor the ominous silence that followed. You know how it is when you try to make something clear, and then feel you have failed, or you sense an element of doubt that pains your honest soul. I was relieved when Harry Osborne took the floor. Like many farmers, he seldom speaks, but always listens with patience and understanding. And when he does say something, there is point to it.

"Your uncle couldn't have done that up where I come from," he drawled.

"Why not?" I queried.

"Well, I'll tell you. You see the snow gets mighty deep up there—three, four, five feet on the level. And the logs would all get buried. Soon's the first one was burnt, you couldn't find another."

"I forgot to mention," I retorted, "that Uncle Roscoe had thought of that very thing. So almost from the first he strung his logs up through the back pasture all the way to the wood lot a half mile or so from the house. And he fastened them end to end with cinch chains, and, believe it or not, that chimney jack of his just nosed the whole thing along. Time came when he got his system down so pat that by hauling two or three logs to the house with his oxen in the fall, just to sort of prime the thing (like a dipper of water in a reluctant pump), he could pull as many more as he needed all the way from the wood lot automatically."

"Now, Guppy," Joe Dyer interrupted, "we never aim to doubt no

yarn that has a semblance of truth, but you have stepped a bit too fur, seem's to me. No jack could draw logs like that, and, furthermore, sooner or later some of them would have froze fast, and then what?"

"I'll forgive your doubts, Joe," I replied, "for you haven't the inventive sense that Uncle Roscoe possessed. I admit he was treed a bit at first (no pun intended), but you must remember that that was a cold country with lots of snow, and 'twas necessary to keep a fire all the time. That was the point to the whole thing. Quite naturally considerable snow worked in with the logs, or melted and ran in around them. Well, sir, he rigged a boiler right there, caught this snow and water and turned it to steam, which was easy with such a fire. Part of this steam he piped back along the log row to prevent freezing. Didn't need it often, though, for by releasing a bit now and then, letting it condense and freeze, the logs would come slipping along on a glare of ice just as nice as could be. All excess steam he piped to the jack, to give it whatever reinforcement it needed at times of particular strain."

It was Joe Weaver who pulled himself up in his chair at this point. "Now fellers," he began, "don't throw things at Gup. Remember he's a city feller now and can't take it. And I, for one, don't have no reason to doubt his yarn, for I've seen an arrangement stranger than this rig he claims his uncle invented. And it was a practical one, too. Toss another of them birch sticks onto our fire there, Bascom—you're host ternight, you know—and hand me one of them nickel Coronys, Harry, and I'll spin yer the how of it.

"This was when I was jest into long pants, and had took to goin' a vesseling from Yarmouth and them ports. In '89 it was (or so I reccerleck) that our ship got froze in way up north in Baffin Bay, and a native saved our lives by guiding us over the ice to his village on the island of Yougoochie. Talk about snowfall! That's where they have it! And the bears and sich wild animuls—simply monsters! You've hearn me tell about some of 'em before. The Yougoochians couldn't build houses like most folks—not even igloos and sich—for, come the depth of winter, they'd be buried in a hunnerd foot of snow.

"But didja ever notice how nature has its compensations? It's at Yougoochie that they grow them great pine trees, taller than tall and straighter than straight. And what a part them trees play in the Yougoochians' lives. Leastwise it was so back in them days. Why, sir, when autumn came and 'twas time ter expect the first of them great snowfalls, each family would pack its skins and other belongings and climb a pine tree. Then they'd trim off the upper fifty feet or so, taking care not to let go of

A TYPICAL VOOHOODEE
(ISLE OF YOUGOOCHIE)

her—that left 'em maybe two hunnerd or two hunnerd fifty feet clear of the ground—and next they'd hack off some of the highest branches, too, and from all this material they'd make them as snug a little wood and brush hut as you ever see—a 'voohoodee,' they called it. The stub of the trunk, mind you, would be sticking a foot or two above the floor through a hole right in the middle.

"Then, just about like Gup's uncle done, they'd take some of the branches for kindling (and huge cones, too, each as big as a kag of salt mackerel), and light a fire around the lopped off stump. They had clay swabbed about, mind you, to form a sort of harth. So having seen all this with my own eyes, I don't have no skepticality about the way Gup's Uncle Roscoe fetched in his firewood."

The silence that followed was broken by Harry. "What I don't jest follow, Joe," he offered, "(and it makes me wunder if even you ain't a yarnin' a bit this time), is how they hauled that there tree up into the hut wunst they'd burnt a foot or two off the stub!"

Joe flicked the ash from his cigar. "I am glad," he replied, "that you brought that up. You must remember that these folks was well above the snow level, generally. And I should have said that the hut was only supported by the branches below it. So every day or two they reached down through trap doors made in the floor for such purposes, and trimmed away the few branches they needed to use with the trunk for firewood. And then they'd hang on while the whole thing slithered down a piece, leaving the trunk stub once more projecting above the harth high enough to burn again. And that was that!

"They had it figgered out that one of them big trees would just about winter 'em through. Often, though, they'd build on the center tree of a clump, and if necessary would hack off a few neighboring branches as they went down by.

"Now and then," he went on, "there'd be an open winter, which made it a bit onhandy, for all the game that generally wouldn't be too fur below their own level (the snow would be firm enough to support most anything) would be far, far beneath. But they allus took the precaution when they clum the tree in the fall to paint muscagle oil all up the trunk. This not only caused the hut or voohoodee to slip down the trunk more easily, at the same time making the green wood more inflammable, but it naturally drew lots of game. By shooting straight down they could easy shoot a bear or warpuss."

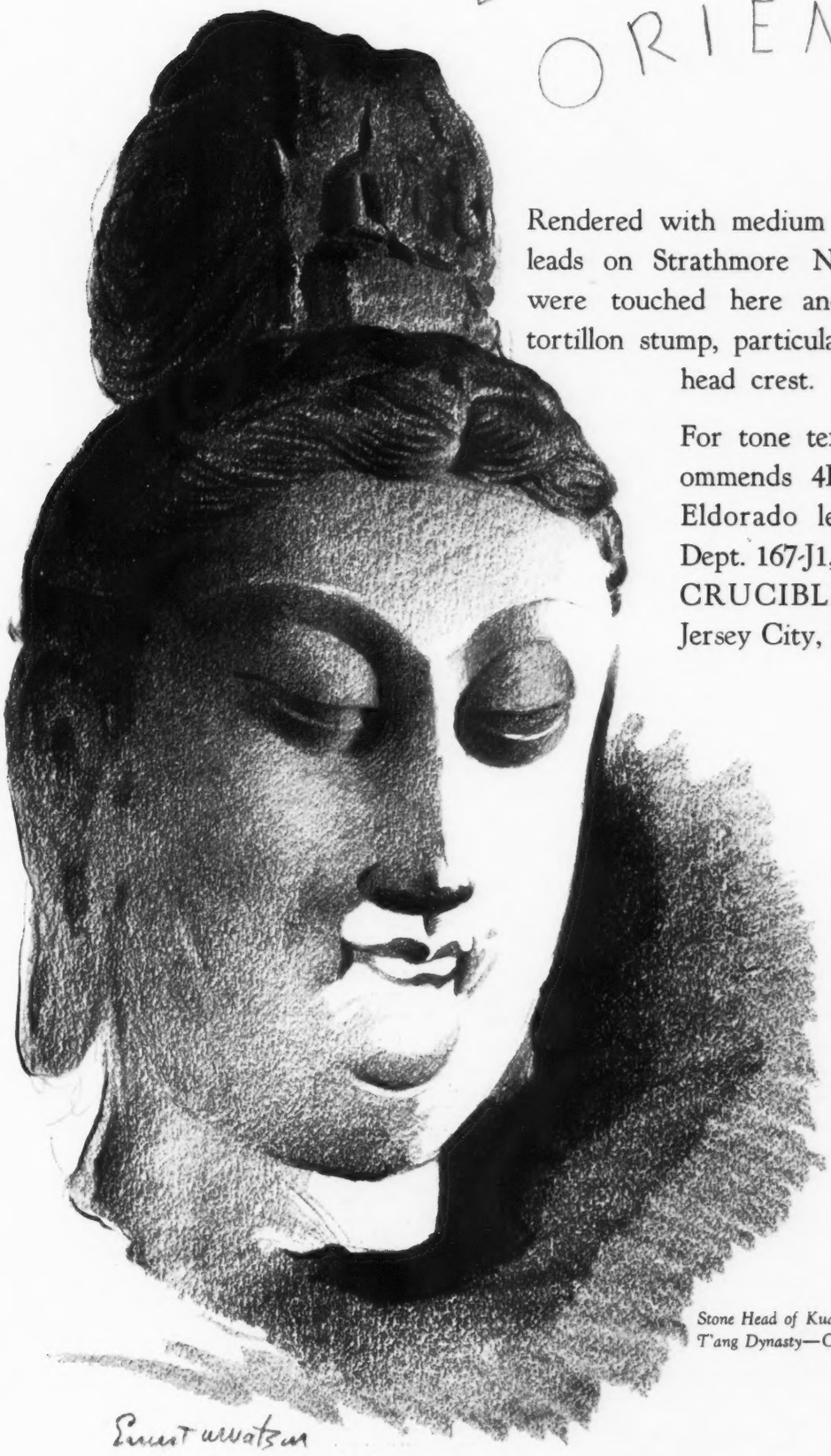
"Wasn't it quite a job, Joe," I ventured, "to get the carcass up to the voohoodee? Or to climb way down?"

"One might think so," he returned, "though I forgot to say that generally every fambly each fall made a line fast to the top of a nearby tree, and rigged a tackle to it, so as the voohoodee slid down, its weight automatically pulled up anything they had hitched to a line below. 'Twas simply marvelous how them iggerant people, way off there in the frozen north, understood the laws of histing. They'd have things geared so a foot drop in the hut might fetch a light object up a hunnerd feet. Heavy objects was purty slow a comin' up. If they shot a bear they'd lasso it, and then just set till gravity pulled it up to them! 'Twas mebby a bit tedious waitin', but time want northin' to them, nohow."

Well, Cornerers, I wish I could go on repeating more of those yarns that were told that night (and trees were involved in most of them), but I imagine you'd be sending explosive packages to me via the mail if I did, so I'll leave the tall story club still in session and get back to my legitimate prattle, or whatever you choose to call it.

Oh, oh! I find my space is about filled. Just room to give you the hot dope that we have arranged for two of the Judges on the Sketch Competition. And are we proud! For they are no less famous individuals than Ernest Watson of Eldorado Page fame and Theodore Kautzky, winner of a previous Corner Competition, and featured in a recent PENCIL POINTS article.

ELDORADO ORIENTALS



Rendered with medium and soft Eldorado leads on Strathmore No. 61 — the tones were touched here and there with the tortillon stump, particularly noticed in the head crest.

For tone texture Watson recommends 4B, 3B, 2B and B Eldorado leads. Pencil Sales Dept. 167-J1, JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.

Stone Head of Kuanyin
T'ang Dynasty—China

SERVICE DEPARTMENTS

THE MART. In this department we will print, free of charge, notices from readers (dealers excepted) having for sale or desiring to purchase books, drawing instruments, and other property pertaining directly to the profession or business in which most of us are engaged. Such notices will be inserted in one issue only, but there is no limit to the number of different notices pertaining to different things which any subscriber may insert.

PERSONAL NOTICES. Announcements concerning the opening of new offices for the practice of architecture, changes in architectural firms, changes of address and items of personal interest will be printed free of charge.

FREE EMPLOYMENT SERVICE. In this department we shall continue to print, free of charge, notices from architects or others requiring designers, draftsmen, specification writers, or superintendents, as well as from those seeking similar positions.

SPECIAL NOTICE TO ARCHITECTS LOCATED OUTSIDE OF THE UNITED STATES: Should you be interested in any building material or equipment manufactured in America, we will gladly procure and send, without charge, any information you may desire.

Notices submitted for publication in these Service Departments must reach us before the fifth of each month if they are to be inserted in the next issue. Address all communications to 330 West 42nd Street, New York, N. Y.

THE MART

JAMES WYNBOROUGH, 101 Park Avenue, New York, N. Y., has for sale all copies of PENCIL POINTS from the first issue to date. Make offer.

THE FOLLOWING copies of *White Pine Series* are wanted in duplicate: Vol. 1, No. 3; Vol. 2, No. 2; copies of PENCIL POINTS containing the *White Pine Series* for April, June, August, October, December, 1932; April, 1933; October, 1935; August, 1936. Address replies to Book Department, care of PENCIL POINTS.

J. ROWE JEFFREY, 4098 Beaconsfield Avenue, Montreal, Canada, would like to obtain the following copies of PENCIL POINTS: July, August, October, and December, 1932.

WANTED: Drafting table or desk. State size, condition, price delivered. Submit photograph if possible. Henry V. Pope, 236 Grand Street, Waterbury, Conn.

WANTED: Proportional divider with adjustable points on the legs, and in first-class condition. D. B. Alex, 501 Kentucky Avenue, Indianapolis, Ind.

PERSONALS

WALTER B. PHILLIPS, *Architect*, 19 West 44th Street, New York, N. Y., has opened a branch office at 203 Seaview Avenue, Palm Beach, Florida.

ARNOLD W. LEDERER, 1499 President Street, Brooklyn, N. Y., has now become a registered architect.

ARTHUR DEIMEL, *Architect*, formerly of Montgomery, Ala., has joined E. L. Schofield, Architect, in partnership at Room 315, Mercer Building, New London, Conn.

FRANK A. SEXTON, *Architect*, has opened his office at Twin Lakes, Wisconsin.

G. E. TAMPLIN, *Architect*, will now practice under the firm name of Tamplin & Fuger, with offices at 217 Farnsworth Avenue, Detroit, Mich.

THEO. STEINMEYER, *Architect*, has left the Government service to resume the general practice of architecture at 460 East Madison Street, Springfield, Mo.

FREE EMPLOYMENT SERVICE

WANTED: Junior draftsman with two or three years' experience provided he also has the qualifications for making perspectives rendered in any one medium. There is a good chance for advancement for one willing to apply himself. Character of the work is mostly small residential. Box No. 1.

WANTED: Excellent position open for residential architect who can design and render in pencil. Well established office. Carlos B. Schoeppl, 627 Lincoln Road, Miami Beach, Florida.

ASSISTANT TO DESIGNER WANTED: Prominent Michigan home appliance manufacturer needs young man to assist present designing staff. Preliminary art training needed. Also ability to render well in at least one medium. Work involves product styling, lettering, exhibits and displays. Permanent work with good opportunities for someone genuinely interested in this field. Salary small to start. State wages expected and experience. Prefer someone located in or near Detroit. Box No. 2.

POSITION WANTED: Architectural draftsman, age 32, married, three years' University training, five years' office experience on residential, church and school commissions, two years head of building and ground department of social institution and one year with Federal Government. Capable and efficient. Excellent references. Desires position with architect, contractor or as manufacturer's representative. Salary commensurate with position. Box No. 3.

POSITION WANTED: Architect and architectural designer, with general practical all-round experience on all types of buildings of city and country, desires position with builder, contractor, engineer or architect. Salary moderate. Box No. 4.

POSITION WANTED: A registered architect and licensed professional engineer, with a background of 25 years of diversified building construction experience in New York City, seeks position with a prominent architect in the capacity of specification writer, supervisor of construction, estimate construction costs, solve ordinary engineering problems in building construction, etc. Box No. 5.

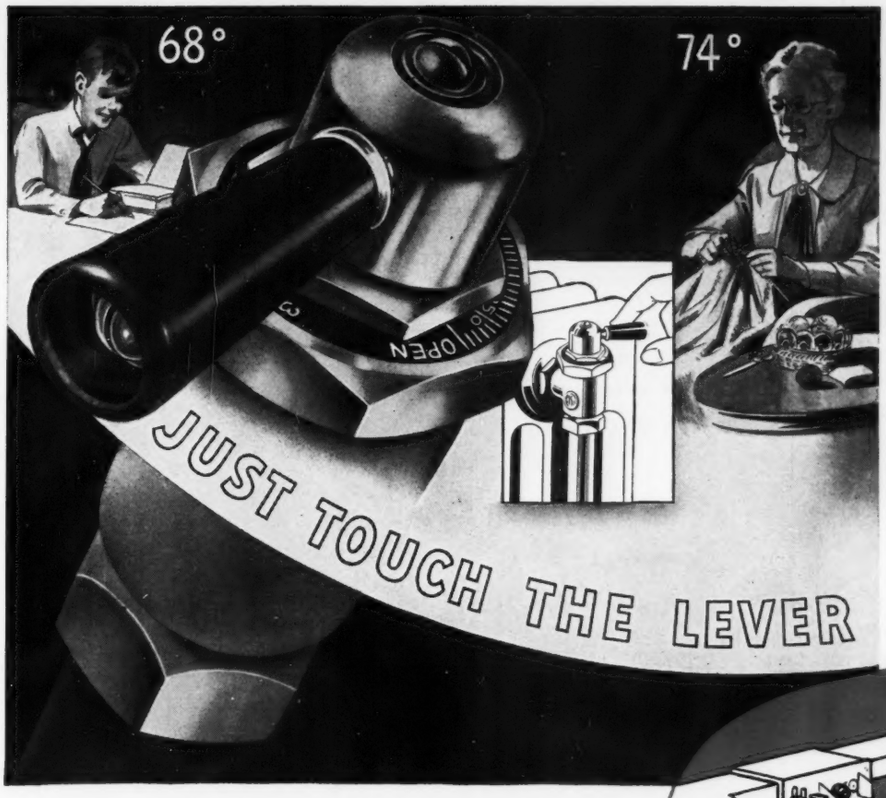
POSITION WANTED: Secretary-stenographer wishes employment. Eight years' experience as secretary to architects, builders and contractors. Available at once. Salary optional. Box No. 6.

POSITION WANTED: Architectural designer-draftsman, university graduate, wishes responsible position. Thoroughly experienced with housing, apartments, commercial, industrial and public buildings, schools and churches. Can carry work through all stages to completion. Location, eastern, western, southern United States. Box No. 7.

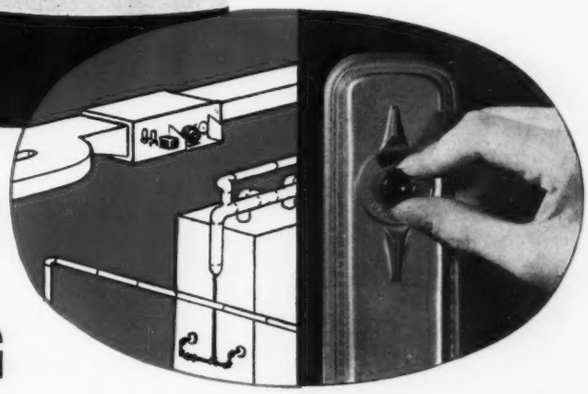
POSITION WANTED: Architect, 20 years' practical experience, congenial, trustworthy, desires position as office manager, specification writer, field superintendent or clerk of the works. New York City or vicinity. Part-time connection considered. Box No. 8.

PARTNERSHIP WANTED: Architect, 42, very practical and trustworthy, desires partnership with young architect with positive financial and social contacts sufficient to secure new business. Or would consider partnership with firm with established practice in New York and vicinity. Member A.I.A. Box No. 9.

(Continued on page 28)



The Hoffman Air Conditioner is controlled by a humidistat located in the living quarters. Operation is entirely independent of the heating plant.



MATCHED HEATING *and* AIR CONDITIONING

. . . INDEPENDENTLY CONTROLLED FOR UNABRIDGED COMFORT

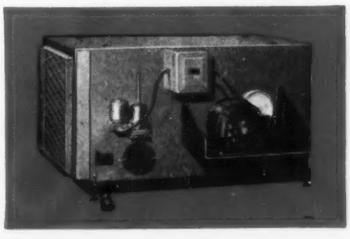
To achieve comfort, as judged by modern standards, is not merely a matter of specifying adequate capacity in the heating and air conditioning equipment. Of equal importance is the type of heating medium and flexibility of control.

That is why Hoffman Controlled Heat with auxiliary Air Conditioner figures so largely in the plans of today's home designers. This vapor-vacuum system provides the radiant heat so essential to genuine comfort. It can be regulated, room-by-room, at a finger's touch upon the lever of the Hoffman Radiator Modulating Valve. Thus certain rooms, if desired, can be kept warmer or cooler, without affecting other rooms. Or, a uniform temperature can be maintained throughout the house.

Equally advantageous is the fact that operation of the Hoffman Air Conditioner is in no way dependent upon the heating system. *It is separately installed and controlled!* This means that in mild weather, when the heat supply is reduced, air conditioning need not be similarly restricted.

Any two-pipe system can be equipped with the simple units which make it a Hoffman Controlled Heat System. The duct work required to circulate cleansed, humidified air from the Hoffman Air Conditioner is extremely simple and easily installed. This is a system you can specify with full confidence that it will not be out-moded for years to come.

The complete story of "Hoffman Controlled Heat with Air Conditioning" is presented in a profusely illustrated 20-page book. Write for your copy to the Hoffman Specialty Co., Inc., Dept. PP-1, Waterbury, Conn.



HOFFMAN

CONTROLLED HEAT WITH AIR CONDITIONING

Also makers of Venting Valves, Supply Valves, Traps and Hoffman-Economy Pumps.

PUBLICATIONS ON MATERIALS AND EQUIPMENT

of Interest to Architects, Draftsmen and Specification Writers

Publications mentioned here will be sent free unless otherwise noted, upon request, to readers of PENCIL POINTS *by the firm issuing them. When writing for these items please mention* PENCIL POINTS.

STANLEY SASH PULLEYS.—Catalog No. 1, just issued, shows the complete line of sash pulleys manufactured by the Pressed Metal Division of the company. Detailed information and specifications are included. 20 pp. 6 x 9. The Stanley Works, New Britain, Conn.

KIESLING ELECTRIC DUMBWAITERS AND DOORS.—New bulletin giving complete information and specifications covering a line of steel rail electric dumbwaiters and bi-parting vertical sliding dumbwaiter doors. 4 pp. 8½ x 11. John W. Kiesling & Son, Inc., 1793 Atlantic Ave., Brooklyn, N. Y.

NATIONAL PREMIER STEEL BOILERS.—A.I.A. File No. 30-C-1. Reference manual for architects and heating engineers covering a line of vertical and horizontal tubular residential steel heating boilers and horizontal tubular commercial boilers. Complete descriptive and engineering data. 16 pp. 8½ x 11. National Radiator Corp., Johnstown, Pa.

Published by the same firm, "National-Unitem Submerged Water Heaters." Bulletin explaining the construction and operation of a line of submerged water heaters, tank and tankless types for use in National Premier steel boilers. Descriptive and engineering data, typical installations, ratings, dimensions, etc. 8 pp. 8½ x 11.

WEISTEEL COMPARTMENTS. — Useful reference guide covering a complete line of flush and panel metal toilet, shower and dressing room compartments and metal and glass hospital cubicles. Construction and specification data, detail drawings. 12 pp. 8½ x 11. Henry Weis Mfg. Co., Inc., Metal Compartments Division, Elkhart, Ind.

Published by the same firm, "Weisway Cabinet Showers." Catalog describing and illustrating the Weisway line of cabinet showers. Construction details, roughing-in dimensions, schedule of suggested applications, prices. 8 pp. 8½ x 11.

ILLUMINATION BY SILVRAY.—Attractive brochure describing the Silvray system of indirect illumination in which silvered bowl Mazda lamps are used in combination with Silvray indirect luminaires. A wide selection of commercial lighting units are shown together with typical installations. 24 pp. 8½ x 11. Silvray Lighting, Inc., 755 General Motors Bldg., New York, N. Y.

HARD MAPLE FLOORING.—New service folder prepared for the convenience of architects, contractors and builders when discussing flooring grade requirements with their clients. Included are shown photographs of maple flooring installations in schools, stores, ballrooms, factories and homes. 4 pp. 8½ x 11. Maple Flooring Manufacturers Assn., 1799 McCormick Bldg., Chicago, Ill.

K & E ELECTRIC MOTORASER.—Folder describing the principal advantages of an electric erasing machine. Prices. Keuffel & Esser Co., 300 Adams St., Hoboken, N. J.

THE NEW SMITH AUTOMATIC AIR HEATER FOR AIR HEATING AND AIR CONDITIONING.—Brochure giving detailed description of the construction and operation of a new type of automatic indirect coal-fired industrial air heater for space heating, also adaptable to both summer and winter air conditioning. 8 pp. James Campbell Smith, Inc., 16374 Euclid Ave., Cleveland, Ohio.

IVANHOE LIGHTING EQUIPMENT.—A.I.A. File No. 31-F. Looseleaf catalog No. 903 illustrates and describes in detail a complete line of commercial and industrial lighting equipment. 134 pp. 8½ x 11. The Miller Co., Meriden, Conn.

Published by the same firm, "Miller Mer-Tung Equipment." Catalog No. 888 shows a new broad line of combination Mercury-Mazda lighting fixtures for commercial requirements. 24 pp. 8½ x 10.

CARRIER AIR CONDITIONING AND AUTOMATIC HEATING FOR THE HOME.—A.I.A. File No. 30-F-1. New bulletin, covering Carrier home air conditioners and home furnaces, describes typical applications, combinations, operation cycle, ratings and capacities. Detailed specifications are included. 8 pp. 8½ x 11. Carrier Corporation, 850 Frelinghuysen Ave., Newark, N. J.

THE CONSTRUCTION OF WEATHER RESISTANT WALLS.—A.I.A. File No. 3 L. An article by L. A. Palmer, in brochure form, presenting a study made of the properties of mortars and unit masonry, which included years of laboratory experimentation, field investigations and a study of the technical literature pertinent to the subject. A collection of valuable data for architects, structural engineers and contractors. 28 pp. 8½ x 11. Structural Clay Products, Inc., 1427 Eye St., N. W., Washington, D. C.

KIMBATTS BUILDING INSULATION. — A.I.A. File No. 37-B-3. Folder with descriptive and installation data covering a Batt type of thermal insulation. Tabular matter, blue print details. 4 pp. 8½ x 11. Kimberly-Clark Corp., Kimbatts Div., Neenah, Wis.

OFFICIAL BULLETIN OF THE ACOUSTICAL MATERIALS ASSOCIATION.—A.I.A. File No. 39-B. Like previous bulletins, Bulletin No. V contains the latest sound absorption test data on the architectural acoustical products of the member companies of the Association. The new bulletin has been enlarged in size to include a technical treatise on architectural acoustics and a number of sample calculations not heretofore included. Acoustical Materials Association, Palmolive Bldg., Chicago, Ill.

O'BRIEN'S FLASHING BLOCKS.—Bulletin with installation details and descriptive information covering a new flashing system utilizing the recently patented O'Brien flashing block. 4 pp. 8½ x 11. L. A. O'Brien, P. O. Box 351, Winston-Salem, N. C.

ROBINSON LAP-LOK WALL COPING.—A.I.A. File No. 5-K. Bulletin L describes and illustrates a new style of salt-glazed vitrified wall coping. 4 pp. 8½ x 11. The Robinson Clay Products Co. of New York, Empire State Bldg., New York, N. Y.

BROWNSKIN RESILIENT BUILDING PAPER.—A.I.A. File No. 19-G. Folder with descriptive and specification data covering a type of building paper. Installation details and photographs. 4 pp. 8½ x 11. Angier Corp., Framingham, Mass.

(Continued on page 40, Advertising Section)

in NEW Smartline Jackets

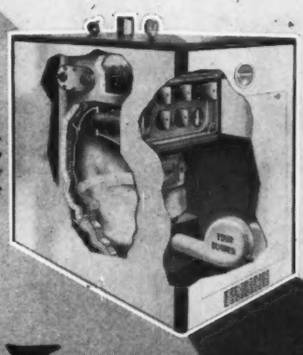
Whether selling boots or boats or boilers, *appearance alone often makes or breaks a sale.* With these new jackets . . . trim as the "Zephyr" or a streamlined motor car, and requiring no extra floor space . . . Kewanee Boilers have been given that added eye appeal which speeds up sales.

But proud as any maker might well be of these new jackets, we still say: **"It's what's under the jacket that counts."** And under each of them is a healthy heart of steel . . . the sturdy Kewanee "R" which has established such enviable records for economically heating homes and smaller buildings.

The Round "R" Line has been enlarged to include boilers as small as 400 sq. ft.

The SQUARE REGAL Smartline — to completely enclose the boiler and any short burner

The REX SQUARE Smartline — a close fitting jacket enclosing the boiler only



The REGAL Smartline — to completely enclose the boiler and any long burner

Round "R" KEWANEE STEEL BOILERS

KEWANEE BOILER CORPORATION
KEWANEE, ILLINOIS
division American Radiator and Standard Sanitary Corporation

Branches in Sixty-one Principal Cities
Eastern District Office, 37 West 39th Street, New York City

FREE EMPLOYMENT SERVICE FOR READERS OF PENCIL POINTS

Replies to box numbers should be addressed care of PENCIL POINTS, *330 West 42nd Street, New York*

(Continued from page 24)

POSITION WANTED: Junior draftsman, age 23, B.S. degree in architecture, desires position with architect or builder. Considered neat and accurate draftsman, also can render in pen, pencil and wash. Best references. Box No. 10.

POSITION WANTED: Young man, 22, employed at present in Palm Beach, desires position in Philadelphia or New York. Two years in architectural college, year's experience in office and additional experience in landscaping. Prefer to obtain work that would in no way interfere with attending night school, and completion of architectural course. Box No. 11.

POSITION WANTED: Experienced landscape architect desires position with reputable firm. Have position at present but wish to enter established office with opportunity for unlimited advancement based on merit and ability to produce. Expert draftsman, neat, conscientious and competent. Can furnish excellent references. Box No. 12.

PARTNERSHIP WANTED: I wish to contact with a practicing architect, anywhere, who is in need of a permanent associate or partner; some money to invest, 20 years of the best all-round college, east, middle states and western architectural training, business and social experience. Will come well recommended. Box No. 13.

POSITION WANTED: Junior draftsman, age 22, desires position with architect or builder; recent graduate of Mechanics Institute in architectural drafting and design and builder of model homes to scale. Models presently displayed in the New York Museum of Science and Industry, RCA Building, Rockefeller Center, New York. Salary optional. Box No. 14.

POSITION WANTED: Architect, college graduate, age 33, registered in state of Michigan, 14 years of wide architectural experience, 6 years of successful private practice, capable of doing all kinds of office work. Knowledge of construction and mechanical equipment of buildings. Desires position with architectural or manufacturing concern anywhere. Salary secondary. Box No. 15.

POSITION WANTED: Architectural draftsman, age 33, married, 13 years' experience with architects in the south, some supervision, capable of carrying work from sketches to completion. Prefer connection with firm in southwest or west. Box No. 16.

FREE LANCE RENDERING: Architect wishes free lance rendering work. Water color, pen and ink or pencil. Accurate, reasonable. Box No. 17.

POSITION WANTED: Capable all around draftsman on general work. Checker of shop drawings and architect's superintendent on alterations and new work. Good references. Box No. 18.

POSITION WANTED: Fourteen years' experience in general drafting in all branches of work, schools, public buildings, apartment buildings, alterations, etc. Box No. 19.

WANTED: Draftsmen around 35 years of age, with degree and experience of some distinction which parallels these requirements. New York City. Box No. 20.

FREE LANCE RENDERING: Long experience in pencil and water color rendering. Layouts from working drawings. Rush work handled with promptness and efficiency. Box No. 21.

WANTED: By leading manufacturer making a high quality building specialty, sold through architects specifying direct to contractors—manufacturer's representatives carrying two or three lines requiring work with architects; excellent opportunity for men seeking a permanent connection with a house that backs up its men with real cooperation. The line requires no service work of any kind. Applicants will be interviewed by sales manager who will make trip throughout the country the next few weeks. Box No. 22.

SALES AND SALES PROMOTION EXECUTIVE AVAILABLE: A college-trained engineer with sales ability desires opportunity for his efforts—former sales and promotion manager for corporation. Experienced in merchandising of building products. Due to training in market analysis, sales promotion, sales management and personnel, can organize department. Large acquaintance among engineers, architects and contractors in Metropolitan area. Box No. 23.

SALES REPRESENTATIVE DESIRES CONNECTION. Architectural training and following among architects and contractors in New York City, wishes to represent out-of-town manufacturer of building specialty. Box No. 24.

POSITION WANTED: Draftsman, married, 27 years of age, 10 years' experience on various types of buildings. Box No. 25.

POSITION WANTED: Architect, age 35, graduate of leading university. Three years post graduate work at Columbia University, 13 years' experience in leading eastern and mid-western offices in positions of responsibility covering all phases of general architectural practice from draftsman to partnership. Capable of carrying work from sketches through construction to completion. Sound knowledge of business procedure. Desires to contact established architectural firms in South America or United States who would consider partnership arrangement after a period of employment sufficient to establish mutual desirability of an association. Box No. 26.

ASSOCIATION OR PARTNERSHIP WANTED: Seeking a partnership with established architect, or with engineering, or construction group engaged in architectural practice. Registered architect of Connecticut and N. Y. State. Regular academic training and practical experience have been extensive. Gladly submit credentials. Box No. 27.

POSITION WANTED: Junior draftsman, fourth-year architectural student at Cooper Union. Age 20. Knowledge of design, construction, estimating, specification writing, also typing and general office work. Leonard Trentin, 537 East 87th Street, New York.

POSITION WANTED: Competent designer-draftsman wishes to associate himself with high class architectural firm. Box No. 28.

WANTED: Registered architect with extensive experience has been practicing interior decorating for past six years. A new source for architectural business makes desirable an association with a competent designer with well rounded experience to carry out some of this work. Must be in New York City or Westchester. Box No. 29.

This linoleum floor WORKS OVERTIME..

This inviting Armstrong's Linoleum Floor greets customers in Stuart's Pharmacy, Mt. Vernon, N. Y. Field is No. 024 Marbelle with circles and diamonds of No. 40 Ruby, No. 48 Yellow, and No. 27 Black.

YET IT ALWAYS LOOKS *smart* AND *inviting*

FROM early morning till late at night, drug store floors have to stand hard wear. And this heavy traffic is one of the reasons why so many drug stores are using floors of Armstrong's Linoleum.

These floors are durable. They can take heavy traffic without showing it. They're economical to install and easy to maintain. Daily sweeping and an occasional washing and waxing will keep them in first-class condition for years.

In addition, Armstrong's Linoleum Floors are attractive and comfortable and quiet underfoot. They're available in hundreds of colorful standard patterns. Or they may be custom-designed to order, like the one shown above.

Besides Linoleum, Armstrong also offers the only complete line of resilient tiles—Linotile, Accotile, Cork Tile, and Rubber Tile. All are durable, comfortable, and inexpensive to maintain. And each has special qualifications that make it ideal for various kinds of commercial installations.

Armstrong's Architectural Service Bureau offers you technical assistance in planning resilient floors. For more complete information, see Sweet's or write now for a color-illustrated copy of "Better Floors for Better Business." Armstrong Cork Products Co., Building Materials Division, 1206 State St., Lancaster, Pa.

ARMSTRONG'S *Linoleum* *and* RESILIENT TILE FLOORS

LINOTILE · ACCOTILE · CORK TILE · RUBBER TILE · LINOWALL · ACOUSTICAL CEILINGS

F.A.E.C.&T. Letter on Architect and WPA

The clamour about business recovery is so great that the average architect finds it hard to hear if there is any increase in the noise of masons' trowels, carpenters' hammers, riveting machines and so forth. So tumultuous is the cheering that accompanies the receipt of dividends and profits by businessmen and debutantes that it quite drowns the architectural employee's questions: "And what about me? What about the building industry? Am I recovering also?"

These questions come with some pertinence from those architects who are now under threat of dismissal from their jobs on WPA. For, the WPA, believing too readily that dividend recovery indicates employment recovery, is firing thousands.

Is there a recovery of the building industry which justifies the wholesale dismissals of architects from WPA?

Well, according to the *Architectural Forum,* building construction in the 37 eastern states totalled up to $1.8 billions for the first eight months of 1936. This the *Forum* compares with the $4.5 billion figure for the same period of 1928.

Consider public and institutional buildings alone. Here are figures based on F. W. Dodge Corporation estimates:

1928	$982 millions	
1929	901 millions	
1930	885 millions	
1931	683 millions	
1932	315 millions	
1933	176 millions	
1934	276 millions	
1935	402 millions	
1936	523 millions	(probable)

We might imagine that the pickup in the construction of buildings in this category represented increased activity of states and municipalities. The truth is, however, that the pickup is the result of Federal i.e. PWA activity.

For some time past the Federal government has been cutting down on its plans for PWA construction. Immediately after the election it began its indiscriminate slaughter of WPA engineering projects through its dismissal of architects and engineers. This means that the Federal government is abandoning its task of maintaining a proper level of public construction until such time as the local bodies can take up this work again.

But gentlemen with minds like concrete mixers will argue that we are overbuilt so far as public works are concerned anyway. They will claim that the "surplus" architects should take to driving taxis. They will say that what this country needs is a good Architectural Adjustment Act to plow under every third architect.

A candid examination of housing conditions in every city might convince them that there are still some architectural jobs of a public nature to be done. If they read the report concerning schools in New York City, recently made public by a joint committee on problems of school maladjustment they will find that 25% of the existing buildings were built prior to 1894, 50% prior to 1906 and 25% since 1923. They might, after some argument, agree that the 25% which are more than forty years old should be replaced by new structures.

The need for new structures, employment conditions in the building industry, the relatively low level of public works activity indicate that the curtailment of WPA engineering projects is against the public interest. With this in mind the Federation has been fighting layoffs on WPA and has been rallying public support for an enlarged WPA engineering program.

ALAN MATHER
Secretary, Publications Committee
F.A.E.C.&T.

A Letter from Simon Breines

TO THE EDITOR:—

"As a Registered Architect, who has been both employer and employee, I am naturally interested in the recent letters in PENCIL POINTS regarding the Architectural Guild and the Federation of Architects, Engineers, Chemists and Technicians.

"Mr. St. George of the Guild, in the November issue, argues that architectural men have little to gain from joint organization with other groups such as engineers, chemists, and other technicians.

"On the other hand, Mr. Korchien of the Federation claims that these groups are not unrelated at all; that, as technical employees, they have a great deal in common in terms of remuneration, working conditions and professional standards. Mr. Korchien points to the F.A.E.C.T., where there are technical men and women, including hundreds of architects, as a working example of his thesis.

"Frankly, I am in hearty agreement with Mr. Korchien. It seems to me that Mr. St. George is thinking too much in terms of the small architectural office of years ago in which the architect worked in isolation from the rest of the world, to his own disadvantage, and, it must be said, to the disadvantage of his architecture. Times are changing. More and more are architects finding employment in large industrial offices where the very technique of production demands close integration with engineers and a whole variety of technicians. Architects are now working in the offices of chain restaurants and department stores and directly for builders. It is no longer possible for them to be isolated from their fellow technical men, even if they so desired.

"I am concerned, Mr. Editor, that most architects not only have no such desire, but that they have absolutely nothing to gain and a world to lose by a sectarian grouping such as Mr. St. George advocates. I have come to this conclusion through a long membership in the Federation and through many discussions with architects of all lands."

"Buck" Hobbie Rides Again!

TO THE EDITOR:—

"Mr. Mechau's reply in the December issue of PENCIL POINTS to my criticism very much amuses me. I presume he feels well satisfied that he has campletely qualified himself as a horseman, historian, and artist. As a historian I believe if the gentleman will make even the slightest study of the subject he will find no records of our ancestors requiring the assistance of Indians to improve their riding technique.

"As a horseman, I do not wish to malign a Westerner 'born and bred *with a horse in one hand* and a brush in the other.' What a man! However, I question if he has ridden one-half as much as I have. Incidentally, horses are my hobby and the hobby-horse puns have all been handed down for several generations, so Mr. Mechau cannot spring any new ones on me.

"As an artist, I of course have my opinions but as I never could see poetic liberties or 90% structural composition, I presume I would hardly be classed as an art critic and am willing to let it go at that.

"In conclusion, from Mr. Mechau's reply, he must be a regular fellow, all *good* horsemen are and while I have never met him, I hope some day I may be able to ride some Colorado trail with him, and by nightfall he will have heard a few of my horse experiences during the past half century (almost).

"Good Luck, Frank, and may your murals have as much fame—well, even more—than my horsemanship."

Sincerely yours,

E. H. HOBBIE

Louis Allen Abramson Discusses Circulation

TO THE EDITOR:—

"Thanks to PENCIL POINTS for publishing the prize and mention designs in the recent New York World Fair competition. Thanks also to Kenneth Reid for his stimulating criticism. His hope that the opinions would bring about a more thorough study of the

PERMATITE WINDOWS

Casement and Double Hung

BRONZE *or* ALUMINUM

DOUBLE HUNG

NOW USED
IN BUILDINGS OF
MODERATE COST *as well as*
MONUMENTAL
STRUCTURES

★

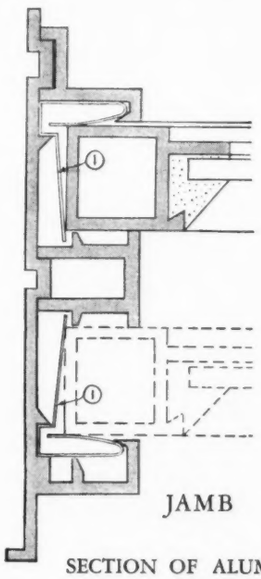
WEATHER-TIGHT

CASEMENT

RUST • DUST AND
RATTLE PROOF

DO NOT WARP NOR STICK

★

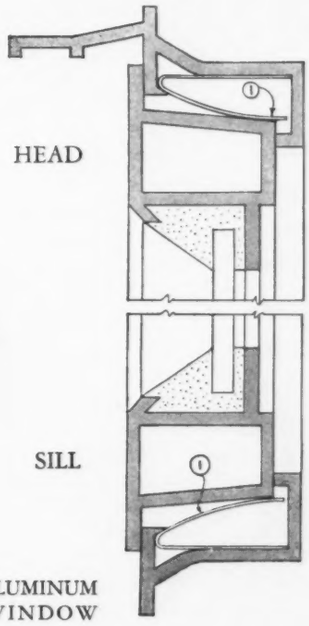


JAMB

SECTION OF ALUMINUM
DOUBLE HUNG WINDOW

NOTE STURDY CONSTRUCTION AND TUBULAR SECTIONS, GIVING MAXIMUM STRENGTH, ALSO RESILIENT NON-CORROSIVE WEATHER-STRIPPING, POSITIVELY SEALING CONTACT BETWEEN SASH AND FRAME IN CONTINUOUS LINE.

(1) PATENTED WEATHER STRIP



SECTION OF ALUMINUM
CASEMENT WINDOW

WRITE DEPT. B-3 FOR CATALOGUE OR SEE SWEETS 1937 FILE

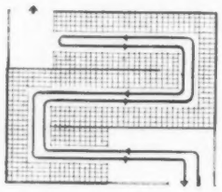
GENERAL BRONZE CORPORATION

LARGEST FABRICATORS OF ARCHITECTURAL METAL WORK

34-19 TENTH STREET • LONG ISLAND CITY, N. Y.

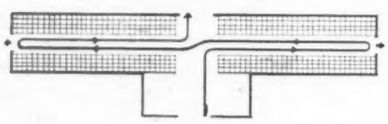
solutions appears to have been fulfilled. Almost everyone, to our knowledge, who was either 'in,' or 'out,' has taken some stand as to the merits of each solution.

"To begin with, we ourselves agree with critic Reid on fundamentals. Emphasis should be made on good circulation in plan, and exposition character in façade. We differ, however, with the critic as to what are the best interpretations of these requirements.



SCHEME 'A'

"It appears that Reid, and to be sure, many others, favor a type of circulation similar to scheme 'A'; but the writer is puzzled as to how, in this type, the circulation can be kept flowing without the public crossing and recrossing the main aisle. It is natural to believe that in scheme 'A' the flow of traffic would force the public through the entire exhibition hall on one side, returning on the opposite side of the aisle, only then to find themselves at the point of entry.



SCHEME 'B'

"On the other hand, there are those who favor a type similar to scheme 'B.' It appears to the writer that scheme 'B' answers the fundamental requirements. It actually avoids congestion by lending itself to a natural flow of circulation, terminating at optional points of exit."

As stated in the comments concerning the World's Fair Competition last month, the remarks printed in connection with the designs shown were opinions only and we applaud Brother Abramson for sticking to his convictions. It is still our feeling, however, that people would be more likely to pass down the aisles between the rows of booths, zig-zagging their way from side to side, stopping at exhibits that attracted them particularly, but proceeding on the whole in one general direction, rather than to go all along one side to the end, returning on the other, determined to miss nothing. Perhaps the truth is that they will do both, and that confusion is inevitable, but we'll bet that to make them circulate as indicated by Mr. Abramson would require more than a white line down the center of each aisle. K. R.

Kautzky Water Colors Shown

Theodore Kautzky, whose work was the subject of the leading article in PENCIL POINTS for November, is exhibiting a representative group of his water colors of European and American subjects at the Architectural League, 115 East 40th Street, New York, for two weeks beginning January 18. The pictures that are to be hung include his most recent paintings and represent considerable advance in technique and compositional skill beyond his earlier show at the League. Take our tip and see them.

Great Lakes Exposition to Repeat

The Cleveland Great Lakes Exposition, run successfully during the past summer, will reopen on May 29 to last for 101 days until September 6. The progress of factory, farm, mine, and laboratory will be dramatized on a broader scale than was permitted by the brief organization period last year, when the show was conceived, designed, built, and opened within a period of 80 days. Almost four million people attended the 1936 exposition and a much greater crowd is expected during the coming season.

N.Y.U. Offers Useful Courses

New York University's School of Architecture offers, beginning at the end of January, its tenth series of practical courses reviewing the fields of architectural design, construction, and practice. Each course consists of a two-hour session weekly for fifteen weeks. The intent is to summarize the more important aspects of each subject so that architects, engineers, and draftsmen may keep in touch with modern developments or review subjects in which they are rusty. The courses, which are scheduled in the evening and Saturday afternoons, are also suitable for those preparing for architectural license exams. They cover Architectural Design, History of Architecture, Architectural Practice, Building Construction and Superintendence, Mechanical Equipment, and Structural Design. Registration begins Jan. 28 at the School's Bryant Park Center, 1071 6th Avenue, New York.

Another course that may interest architectural men is one on the general subject of Air Conditioning. This is intended to provide a sufficient knowledge of the reasons for air conditioning, the factors that determine the capacities, type and arrangement of equipment and the results which such equipment must deliver, to enable them to select intelligently the type best fitted for any particular project and specify or check the proposed installation to insure that it will meet the requirements. This course will be conducted by Alfred L. Jaros, of the firm of Jaros, Baum, and Bolles. It will consist of fifteen two-hour lectures supplemented by a number of exercises and problems. Registration for this course also begins on January 28. Further information may be obtained from the school at the address given above.

Art Clubs for Amateurs

The Associated Amateur Art Clubs of 63 East Adams Street, Chicago, is interested in expanding beyond its present membership of fourteen clubs located in principal cities from coast to coast. The clubs were formed to stimulate and encourage the practice of painting and kindred arts among business and professional men. Wherever there is a group of men who wish to study drawing and painting as amateurs, the Association will be glad to aid them in organizing a club and to keep them in contact with what is going on elsewhere by means of exhibitions, distribution of helpful information and advice, and by serving as a general clearing house for the exchange of ideas. The Association has a record of helpful activity since 1924, when it was first formed. Further information is available from Joseph Huebl, President, A.A.A. Clubs, 772 North Jefferson St., Milwaukee, Wisconsin.

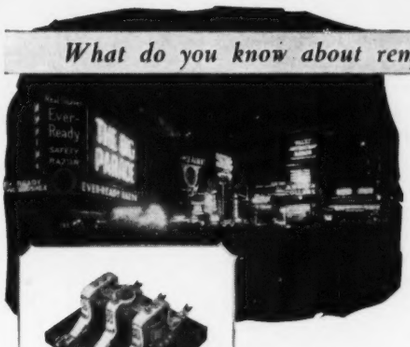
An Idea Worth Passing Along

From the Monthly Bulletin of the Illinois Society of Architects we reprint an item that seemed to us worthy of passing along. It reads as follows:

"Confused architects are absent-mindedly sticking fingers into pencil sharpeners, drawing meaningless lines on telephone directories and tossing in their sleep, as a result of a manifesto from J. Homer Ginsberg, fashionable industrial designer. Addressing the Rush Onward Group of the American Architectural Association, Ginsberg flayed the mossbacks and provincial sentimentalists for not modernizing trees.

"'As a matter of fact,' said Ginsberg, 'trees should either be abandoned or modernized. They can be covered with tin, treated with aluminum paint or even synthetically manufactured. Everybody knows that old-fashioned trees are not symmetrical, have parasites and, I am told, take years to grow. A tin or chromium tree could be turned out in mass production and at only a slightly higher cost, and could be designed to fit in with the concepts of advanced thinkers like myself.'—*Ted Cook*."

What do you know about remote control for lighting circuits ?



This Type "F" switch has unlimited uses for controlling signs, floods, auditorium, stadium, window and any group lighting.

This Type "G" is an automatic throwover switch used with emergency circuits to assure lighting when main supply fails. For hospitals, schools, theatres, etc. A protection against panic and disaster.

The Answer:

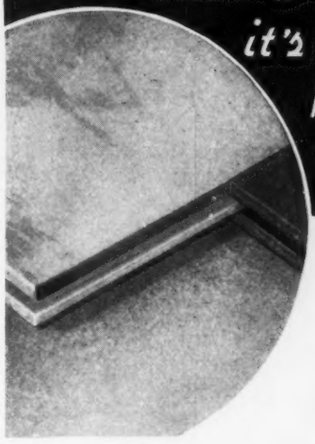
Wherever many lighting circuits supply current for many lights, ease and simplicity of control is desirable. For over 25 years "Diamond H" remote control switches have been specified and selected to control the lighting circuits in the finest buildings. Located on the panel board and actuated by momentary contact switches located at convenient points, they never fail. This sensible method of control is convenient, sure and economical. Main leads to MC switches is not necessary, smaller wire is used. This cuts costs. See that "Diamond H" remote control is specified on your jobs.

There is a "Diamond H" remote control switch for every purpose. Send for Bulletin 10-B or Don Graf Data Sheets. Explanation of types with wiring diagrams.

The HART MFG. CO.
Hartford, Conn.

DIAMOND H SWITCHES

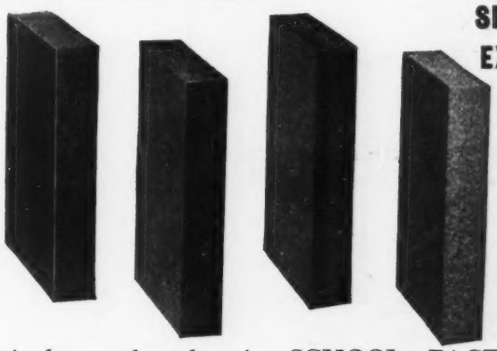
it's colorful . . .
it's economical .
AND IT DOES NOT CRACK OR WARP



SYRA-BORD
the only **TONGUED AND GROOVED**
RUBBER FLOOR COVERING

• It is easy to lay—an average unskilled workman can install it rapidly. SYRA-BORD is manufactured in 10 foot strips—tongued and grooved on sides and ends. After years in service it lies as flat as when first laid. Easy to clean and keep clean.

• We have a wide variety of colors and patterns. Send for color chart.



SERVICISED EXPANSION JOINTS

• Made of fibre—sponge rubber—cork rubber or all-asphalt. Are extensively used today in SCHOOL, FACTORY and HOSPITAL projects.

For more than fifteen years they have been used on road work in every State in the Union.

Write for complete information.

• **DOMESTIC SEWER PIPE** lines are best sealed with SERVICISED SEWER PIPE BELT. It is a prepared, fibrated, mastic cushion, easily inserted in the pipe and forced in to thoroughly waterproof and pack the joint. Many engineers prefer the SERVICISED method of caulking sewer pipe joints because it eliminates roots growing into the pipes.

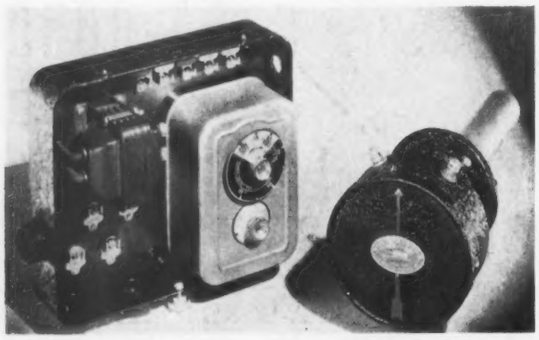
• If our literature is not in your files we shall be glad to send you a full set upon receipt of your request.

Servicised Products Corp.
6056 W. 65th ST. CHICAGO, ILL.

NEW PRODUCTS

IRON FIREMAN PYROMETRIC CONTROL SYSTEM

Coal is metered to the fire on the basis of both time and temperature by the new Pyrometric control system introduced by the Iron Fireman Manufacturing Co., Portland, Ore. The new controls operate the stoker under thermostat control from the rooms being heated, and make the most of the stable fuel bed characteristic



of a coal fire to keep the heating plant warm and conditioned for use between thermostat operations. In effect the boiler or furnace is used as a small reservoir of heat ready for quick delivery, with attendant advantages of immediate response to changes in room temperature, shorter heating operations, less wear and tear on the heating plant, and generally smoother and more efficient heating.

The Pyrometric control system also provides positive assurance that the coal burner will not continue operating if for any reason the fire becomes extinguished.

A unique feature of the Pyrometric system is found in its indicator dial. This dial tells which one of four reasons is responsible for the operation or idleness of the burner.

NEW LINE OF REINFORCED RUBBER TILE

An entirely new line of Armstrong-Stedman reinforced rubber tile, consisting of forty striking colors, has been announced by the Armstrong Cork Products Company, Lancaster, Pa.

The new line of rubber tile, first to be announced following the purchase of the Stedman Rubber Flooring Company by Armstrong last August, includes a number of completely new colors as well as refinements of the colors formerly found in the Stedman line and Armstrong line prior to the purchase.

Armstrong-Stedman rubber tile is manufactured with a filament reinforcement. In the manufacture of the tile, new cotton fibres—short filaments almost invisible to the eye—are introduced into the rubber compound which surrounds and impregnates them, forming a reinforced mass that later, under a tremendous vulcanizing pressure, becomes a homogeneous whole. This process results in high tensile strength and maximum resistance to abrasion, indentation, and penetration.

The new Armstrong-Stedman rubber tile is distinguished by its non-directional swirl marbling, an exclusive feature, which hides wear and traffic marks. Another feature is the two tone colors, developed for installations where the decorative effect of solid colors is desired at lower costs than are possible with solid colors, which, due to manufacturing difficulties, tend to cost more. The two tone colorings also conceal traffic marks more effectively than solid colors.

Three types of rubber cove base are available for forming an attractive, sanitary joining of rubber tile floors to walls.

Aside from its use as a floor material, rubber also is used satisfactorily for desk, counter, and table tops; wainscoting; runners, stair treads, thresholds; plinths; panels; and push and kick plates.

Color plates of the complete Armstrong-Stedman line, together with suggested decorative schemes and full technical data, are contained in a new folder entitled, "New Beauty and Comfort in Floors." Copies of the folder may be obtained without charge by writing to the Armstrong Cork Products Company, Tile Floors Dept., Lancaster, Pa.

IMPROVED DESK-HIGH CABINET

Several improvements in design and construction appear in a new model desk-high storage cabinet just announced by the All-Steel-Equip Company, Inc., of Aurora, Ill., manufacturers of steel office furniture.

The cabinet, of finest grade stretcher-leveled furniture steel, is electrically spotwelded throughout, giving it the smoothest possible appearance, free from any bolt heads or similar detractions. More top surface is afforded by a top that overhangs ½" on all sides. Two shelves, adjustable on 1½" center, give ample storage space for office supplies.

Smoothness of appearance in the new cabinet is enhanced through the use of the well-known A-S-E torpedo-type hinge. Smooth embosses in the door itself form part of this hinge, eliminating the possibility of maladjustment and consequent door sag. Because the embosses completely cover the ends of the hinge pins, the door is practically "jimmy-proof" and the cabinet doubly secure as a storage place.

The cabinet legs are made of heavier steel than the case and are formed so as to give all the strength of square tubing. Special replaceable feet are screwed into the bottom of the legs for the purpose of taking the shock when the cabinet is moved across a floor.

A handy steel pocket for the accommodation of papers or small booklets, catalogs or directories is welded to the inside of the door on the new model cabinet.

A solid die-cast chromium plated handle, standard on all All-Steel-Equip cabinets, is used and the door is secured with a grooved key disc-tumbler lock.

The All-Steel-Equip desk-high cabinet is an ideal auxiliary storage unit for installation beside the desk of stenographer, secretary or executive and its finished appearance makes it fit harmoniously into the best-appointed office.

THERMAX AND ABSORBEX SALES TO BE HANDLED BY CELOTEX CORP.

The Thermax Division of the Northwest Magnesite Co., Pittsburgh, Pa., announces that arrangements have been consummated whereby, effective Jan. 1, 1937, Thermax and Absorbex sales will be handled exclusively by The Celotex Corporation.